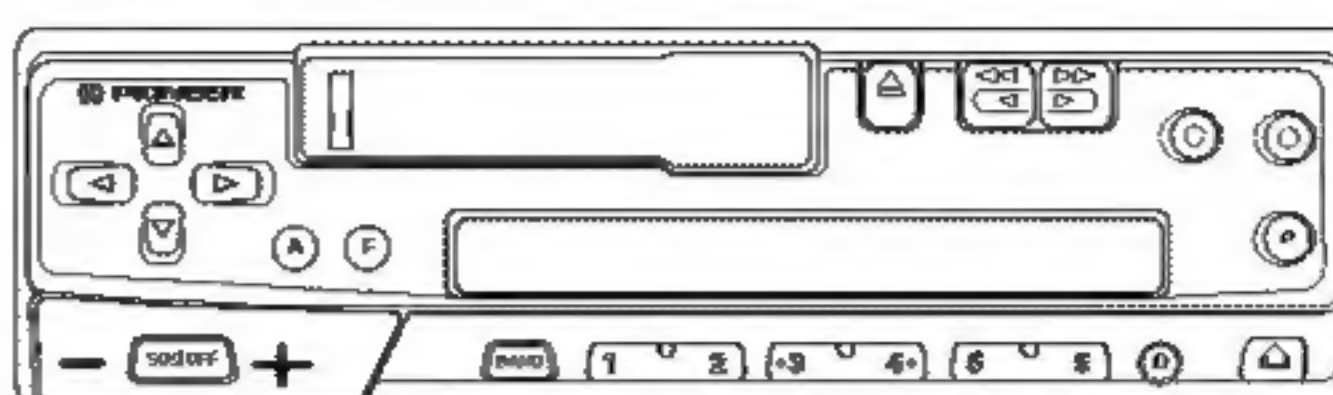


# Service Manual

**PIONEER**  
The Art of Entertainment

• KEH-P27R/X1M/GR



ORDER NO.  
**CRT2108**

MULTI-CD CONTROL HIGH POWER CASSETTE PLAYER WITH RDS TUNER

# KEH-P27R

**X1M/GR**

HIGH POWER CASSETTE PLAYER WITH RDS TUNER

# KEH-2720R

**X1M/GR**

## NOTE:

- See the separate manual CX-644(CRT1800) for the cassette mechanism description.
- The cassette mechanism assy employed in this model is one of 2M series.
- This service manual does not describe the CD test mode.

For the operations in the CD test mode, refer to the CD player's Service Manual.

## CONTENTS

1. SAFETY INFORMATION .....	2	7. GENERAL INFORMATION .....	33
2. EXPLODED VIEWS AND PARTS LIST .....	3	7.1 PARTS .....	33
3. SCHEMATIC DIAGRAM .....	10	7.1.1 IC .....	33
4. PCB CONNECTION DIAGRAM .....	18	7.1.2 DISPLAY .....	39
5. ELECTRICAL PARTS LIST .....	26	7.2 DISASSEMBLY .....	40
6. ADJUSTMENT .....	31	7.3 BLOCK DIAGRAM .....	41
		8. OPERATIONS AND SPECIFICATIONS .....	42

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## **1. SAFETY INFORMATION**

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.

Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.

Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.

If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

## 2. EXPLODED VIEWS AND PARTS LIST

### 2.1 PACKING

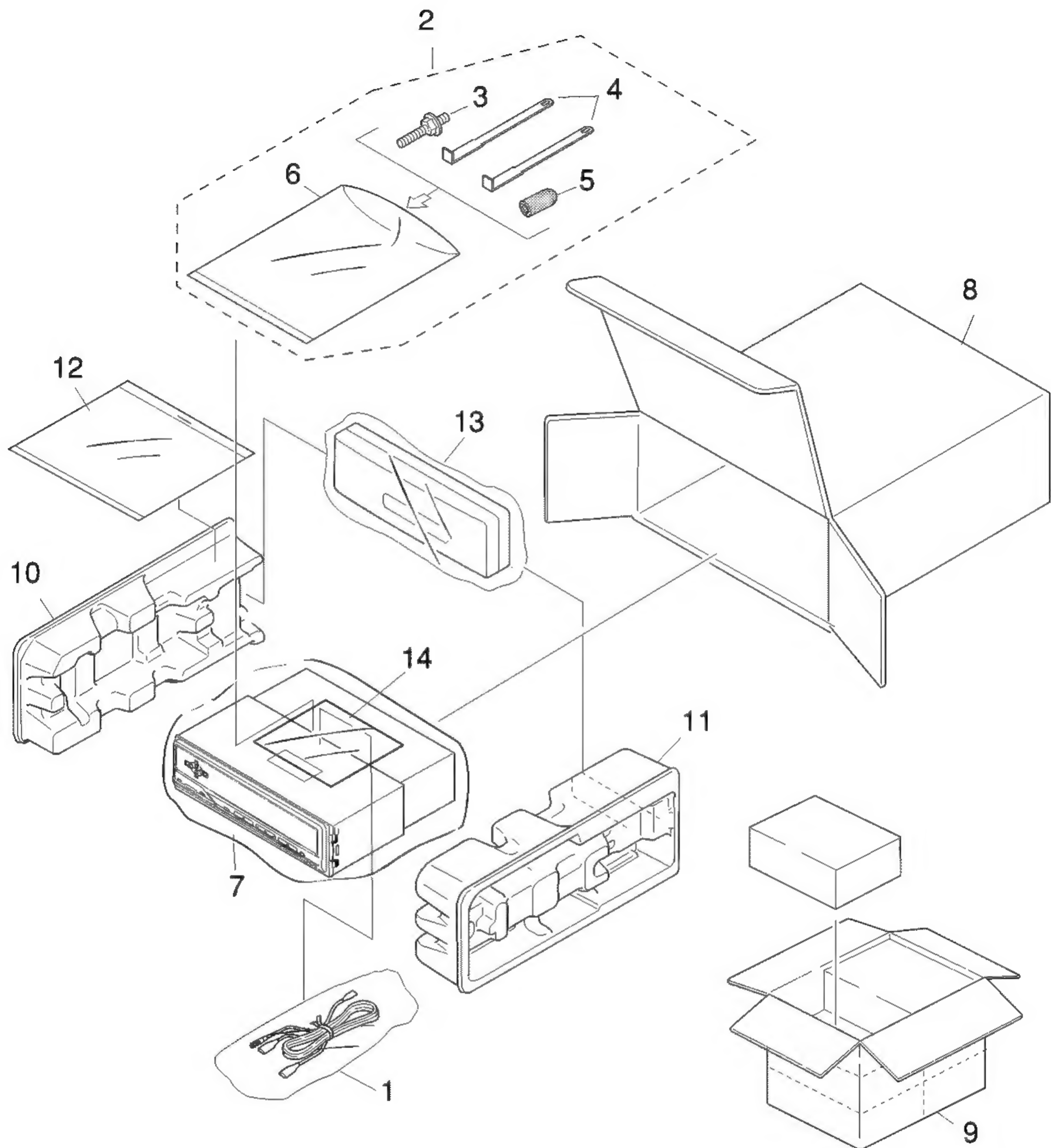


Fig. 1



## KEH-P27R,2720R

### NOTE:

- Parts marked by “\*” are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ∇ mark on the product are used for disassembly.

### ● PACKING SECTION PARTS LIST

Mark	No.	Description	Part No.	
			KEH-P27R/X1M/GR	KEH-2720R/X1M/GR
	1	Cord Assy	CDE5497	CDE5498
	2	Accessory Assy	CEA1917	CEA1917
	3	Screw	CBA1304	CBA1304
	4	Handle(x2)	CNC5395	CNC5395
	5	Bush	CNV3930	CNV3930
*	6	Polyethylene Bag	E36-615	E36-615
	7	Polyethylene Bag	CEG-162	CEG-162
	8	Carton	CHG3344	CHG3350
	9	Contain Box	CHL3344	CHL3350
	10	Protector	CHP1622	CHP1622
	11	Protector	CHP1623	CHP1623
	12-1	Owner's Manual	CRB1418	CRB1407
	12-2	Installation Manual	CRB1411	CRB1408
*	12-3	Passport	CRY1013	CRY1013
*	12-4	Warranty Card	CRY1087	CRY1087
	13	Case Assy	CXB1063	CXB1063
*	14	Caution Card	CRP1172	CRP1172

### ● Owner's Manual, Installation Manual

Model	Part No.	Language
KEH-P27R/X1M/GR	CRB1418	German
	CRB1411	German
KEH-2720R/X1M/GR	CRB1407	German
	CRB1408	German

## 2.2 EXTERIOR

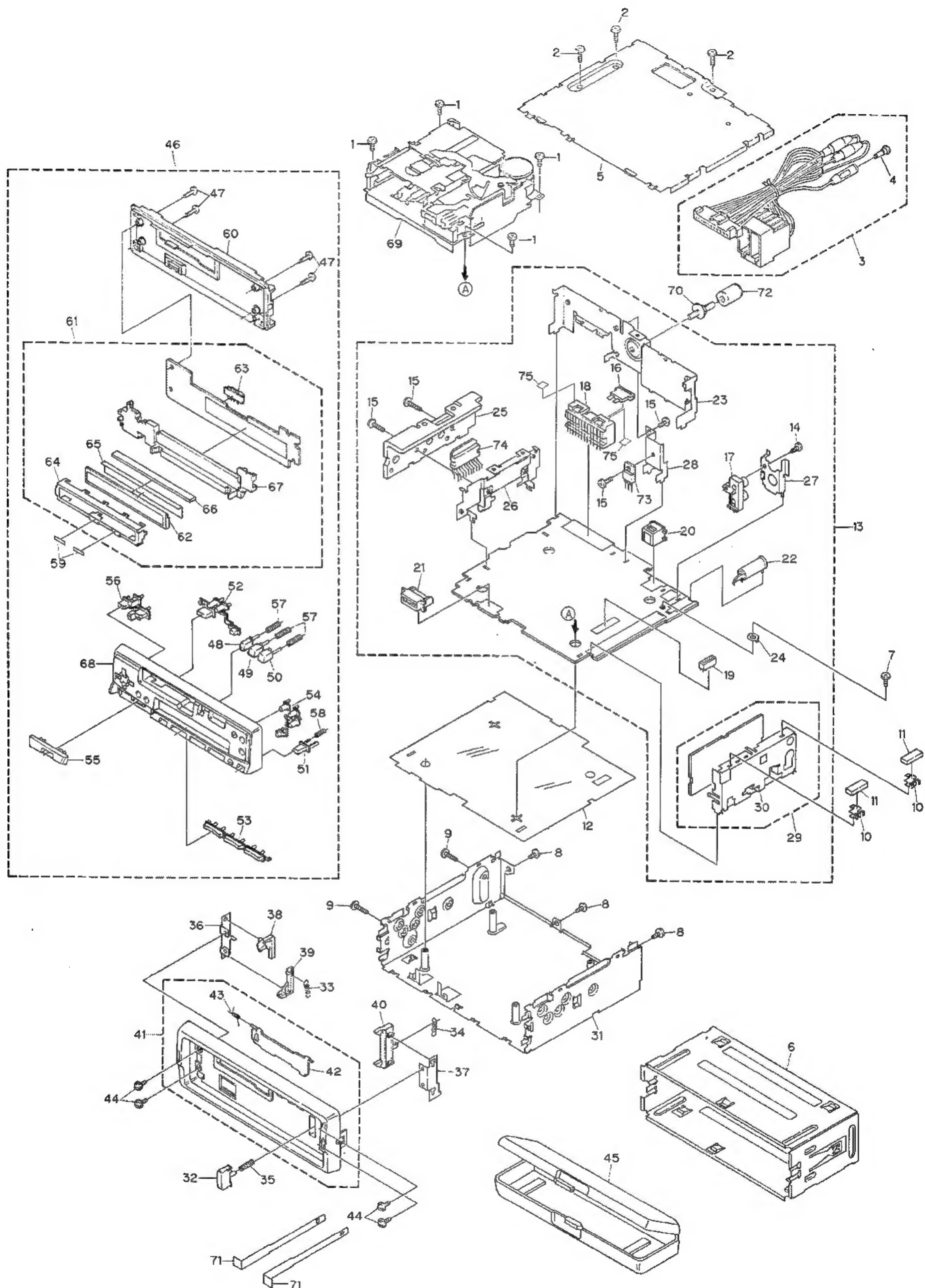


Fig. 2



## (1) EXTERIOR SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BSZ26P050FMC	41	Panel Unit	CXA9848
2	Screw	BSZ30P100FMC	42	Door	CAT1835
3	Cord Assy	See Contrast table(2)	43	Spring	CBH1838
4	Terminal Cover	CKX-003	44	Screw	IMS20P030FZK
5	Case	CNB2074	45	Case Assy	CXB1063
6	Holder	See Contrast table(2)	46	Detach Grille Assy	See Contrast table(2)
7	Screw	BSZ30P055FUC	47	Screw	BPZ20P120FZK
8	Screw	BSZ30P060FMC	48	Button(≡)	CAC4867
9	Screw	BSZ30P100FMC	49	Button(◀)	CAC4868
10	Holder	CNC5704	50	Button(▶)	CAC4869
11	Cushion	CNM4870	51	Button(⏏)	CAC4993
12	Insulator	CNM5025	52	Button(SOURCE, A, F, BAND)	CAC5306
13	Tuner Amp Unit	See Contrast table(2)	53	Button(1-6)	CAC5308
14	Screw	See Contrast table(2)	54	Button(TA/AF, PTY, P, D)	CAC5320
15	Screw	BSZ26P080FMC	55	Button(VOL+,VOL-)	CAC5322
16	Fuse(10A)	CEK1136	56	Button	CAC5324
17	Pin Jack(CN401)	See Contrast table(2)	57	Spring	CBH1836
18	Plug(CN601)	CKM1270	58	Spring	CBH2103
19	Connector(CN604)	CKS3362	59	Spacer	CNM5319
20	Connector(CN602)	See Contrast table(2)	60	Cover	CNS4628
21	Connector(CN603)	CKS3581	61	Keyboard Unit	See Contrast table(2)
22	Antenna Jack(CN301)	CKX1056	62	LCD(LCD901)	CAW1391
23	Panel	See Contrast table(2)	63	Connector(CN901)	CKS3580
24	Holder	CNC5399	64	Holder	CNC6846
25	Heat Sink	CNC6217	65	Reflector	CNM5542
26	Holder	CNC6372	66	Connector	CNV4763
27	Holder	See Contrast table(2)	67	Lighting Conductor	CNV5074
28	Holder	CNC6845	68	Grille Unit	See Contrast table(2)
29	FM/AM Tuner Unit	CWE1470	69	Cassette Mechanism Assy	EXK3458
30	Holder	CNC6554	70	Screw	CBA1304
31	Chassis Unit	See Contrast table(2)	71	Handle	CNC5395
32	Button	CAC4836	72	Bush	CNV3930
33	Spring	CBH1834	73	Transistor(Q801)	2SD2037
34	Spring	CBH1835	74	IC(IC501)	HA13155
35	Spring	CBH1996	75	Spacer	CNM5739
36	Bracket	CNC6135			
37	Bracket	CNC6791			
38	Arm	CNV4692			
39	Arm	CNV4693			
40	Arm	CNV4728			

**(2) CONTRAST TABLE****KEH-P27R/X1M/GR and KEH-2720R/X1M/GR are constructed the same except for the following:**

Mark No.	Symbol and Description	Part No.	
		KEH-P27R/X1M/GR	KEH-2720R/X1M/GR
3	Cord Assy	CDE5497	CDE5498
6	Holder	CNC6798	CNC5394
13	Tuner Amp Unit	CWM5518	CWM5522
14	Screw	BPZ26P080FMC	Not Used
17	Pin Jack(CN401)	CKB1035	Not Used
20	Connector(CN602)	CKS3408	Not Used
23	Panel	CNB2245	CNB2246
27	Holder	CNC6531	Not Used
31	Chassis Unit	CXB1664	CXB1667
46	Detach Grille Assy	CXB1721	CXB1726
61	Keyboard Unit	CWM5527	CWM5531
68	Grille Unit	CXB1652	CXB2320(Assy)



## 2.3 CASSETTE MECHANISM ASSY

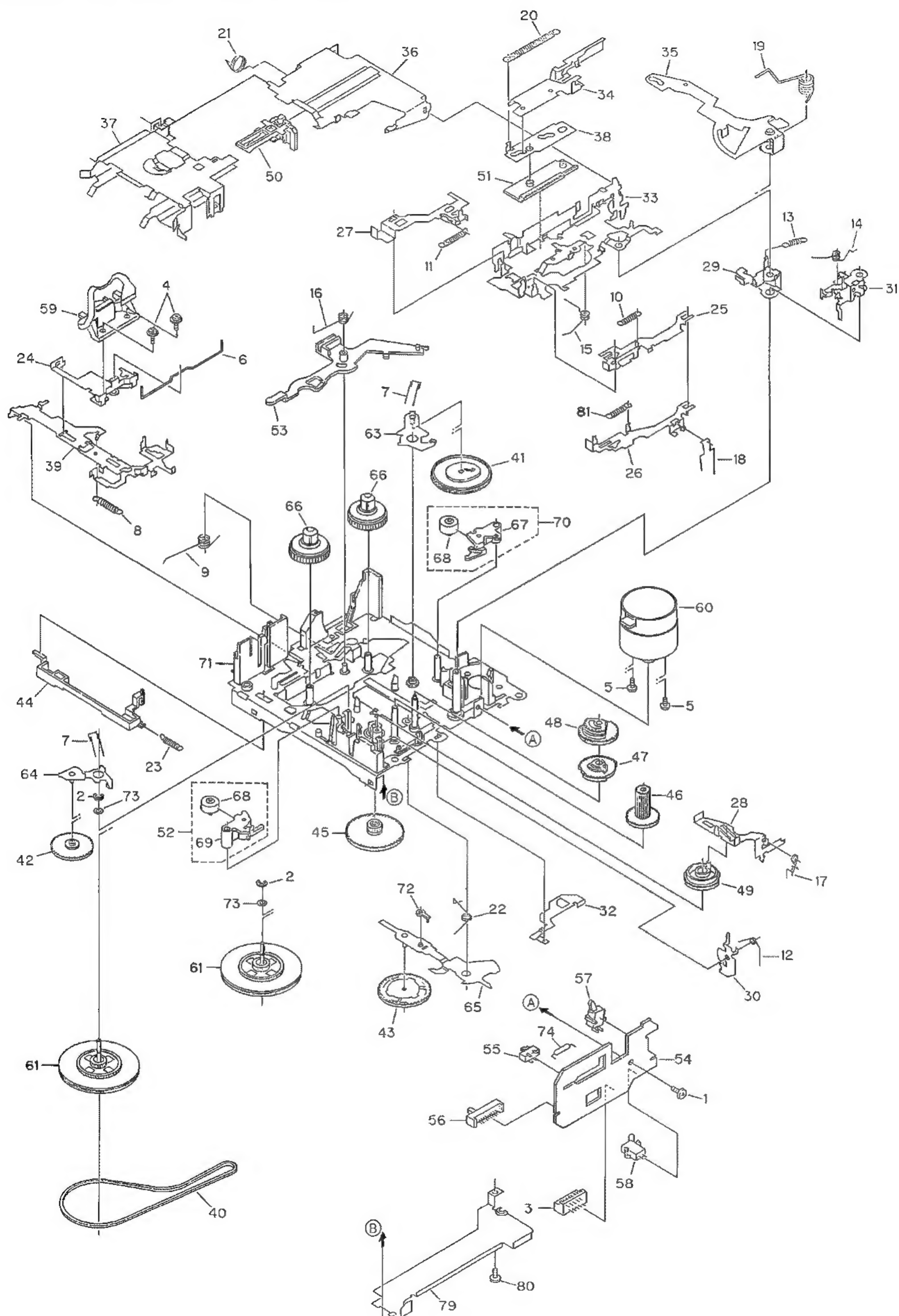


Fig. 3



# ● CASSETTE MECHANISM ASSY SECTION PARTS LIST

Mark No.	Description	Part No.	Mark No.	Description	Part No.
1	Screw	BSZ23P050FMC	41	Gear	ENV1504
2	Washer	CBG1003	42	Gear	ENV1470
3	Connector(CN1)	CKS2829	43	Gear	ENV1517
4	Screw(M2x5)	EBA1038	44	Lever	ENV1472
5	Screw(M2x2.5)	EBA1037	45	Gear	ENV1510
6	Spring	EBH1554	46	Gear	ENV1475
7	Spring	EBH1555	47	Gear	ENV1512
8	Spring	EBH1556	48	Gear	ENV1513
9	Spring	EBH1557	49	Gear	ENV1502
10	Spring	EBH1591	50	Lever	ENV1480
11	Spring	EBH1559	51	Lever	ENV1487
12	Spring	EBH1593	52	Pinch Holder Unit	EXA1516
13	Spring	EBH1561	53	Arm	ENV1489
14	Spring	EBH1562	* 54	PCB	ENP1161
15	Spring	EBH1563	55	Switch(Eject)(S4)	ESG1006
16	Spring	EBH1590	56	Switch(FWD)(REV)(S3)	ESH1006
17	Spring	EBH1565	57	Switch(Load)(S1)	ESN1016
18	Spring	EBH1566	58	Switch(Mute)(S2)	ESN1017
19	Spring	EBH1567	59	Head Assy(HD1)	EXA1466
20	Spring	EBH1568	60	Motor Unit(M1)	EXA1467
21	Spring	EBH1569	61	Flywheel Unit	EXA1468
22	Spring	EBH1571	62	.....	
23	Spring	EBH1579	63	Arm Unit	EXA1447
24	Head Base	ENC1475	64	Arm Unit	EXA1448
25	Lever	ENC1429	65	Arm Unit	EXA1449
26	Lever	ENC1430	66	Reel Unit	EXA1450
27	Lever	ENC1431	67	Pinch Holder	ENV1466
28	Lever	ENC1432	68	Pinch Roller	ENV1518
29	Arm	ENC1433	69	Pinch Holder	ENV1467
30	Arm	ENC1434	70	Pinch Holder Unit	EXA1515
31	Arm	ENC1480	71	Chassis Unit	EXA1498
32	Arm	ENC1476	72	Service Arm	EXX1048
33	Bracket	ENC1477	73	Washer	HBF-179
34	Lever	ENC1483	74	Resistor(R1)	RD1/4HM472J
35	Arm	ENC1439	75-78	.....	
36	Frame	ENC1440	79	Cover	ENC1452
37	Holder	ENC1441	80	Screw	BSZ23P050FMC
38	Lever	ENC1446	81	Spring	EBH1592
39	Lever	ENC1478			
40	Belt	ENT1027			









A-a A-b

A TUNER AMP UNIT

B FM/AM TUNER UNIT

⇐ TAPE SIGNAL  
⇐ FM SIGNAL  
⇐ CD SIGNAL  
⇐ TAPE, FM, CD SIGNAL

IP-BUS ISOLATOR

TA2050S

KEH-P27R/X1M/GR

KEH-P27R/X1M/GR

PM2007A

PLL IC

IC301



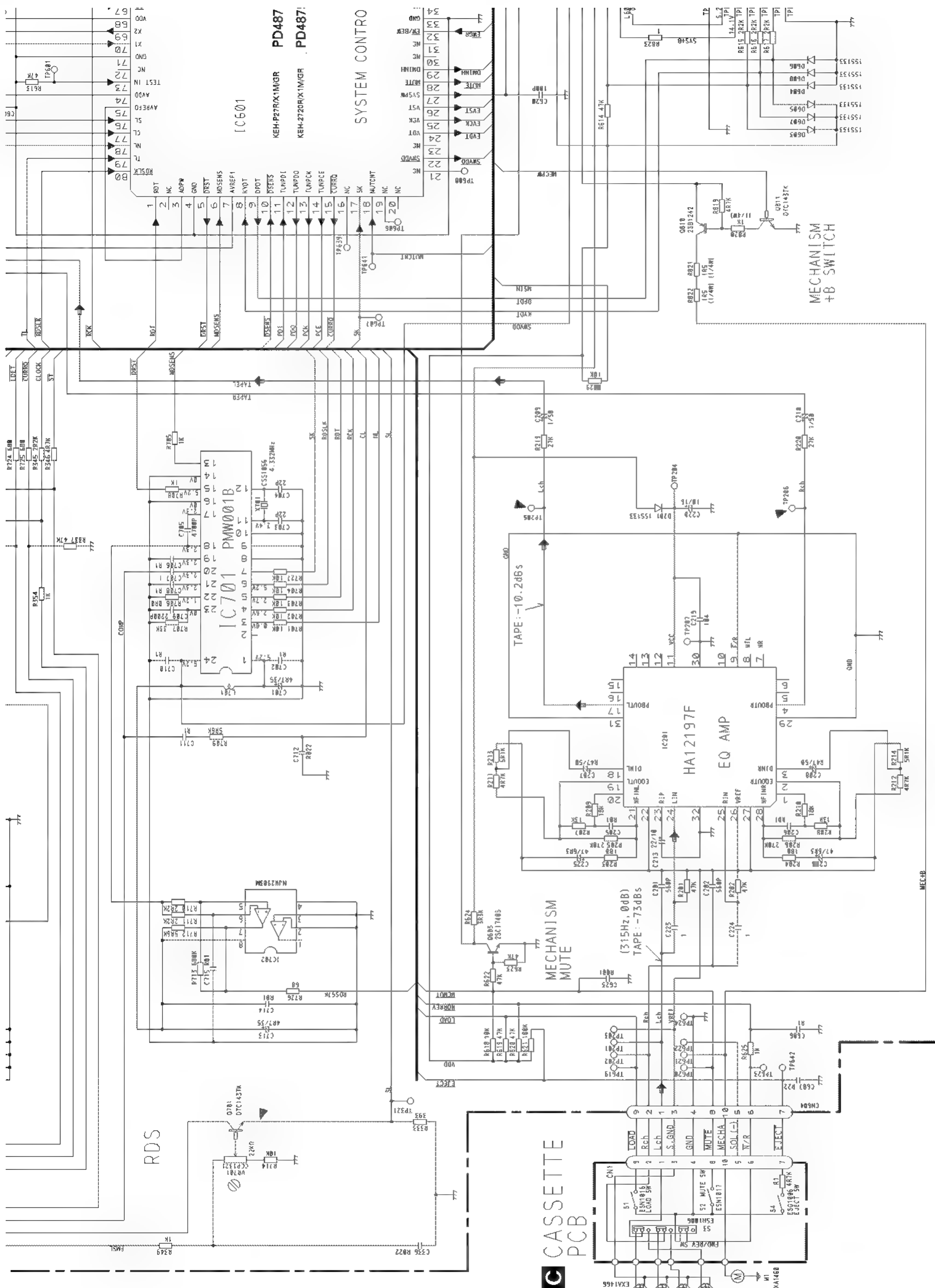


Fig. 5





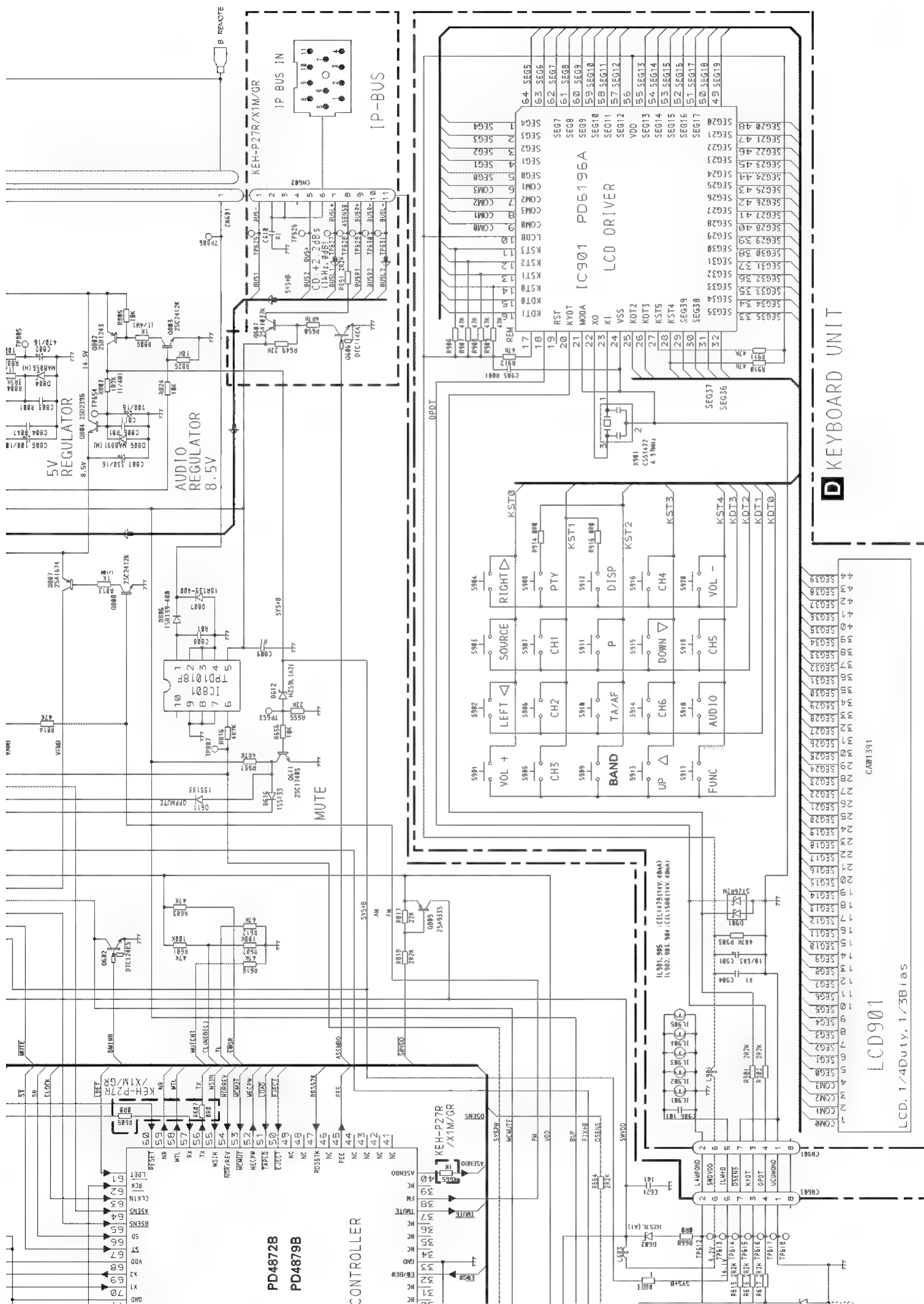


Fig. 6

**B**

## 1





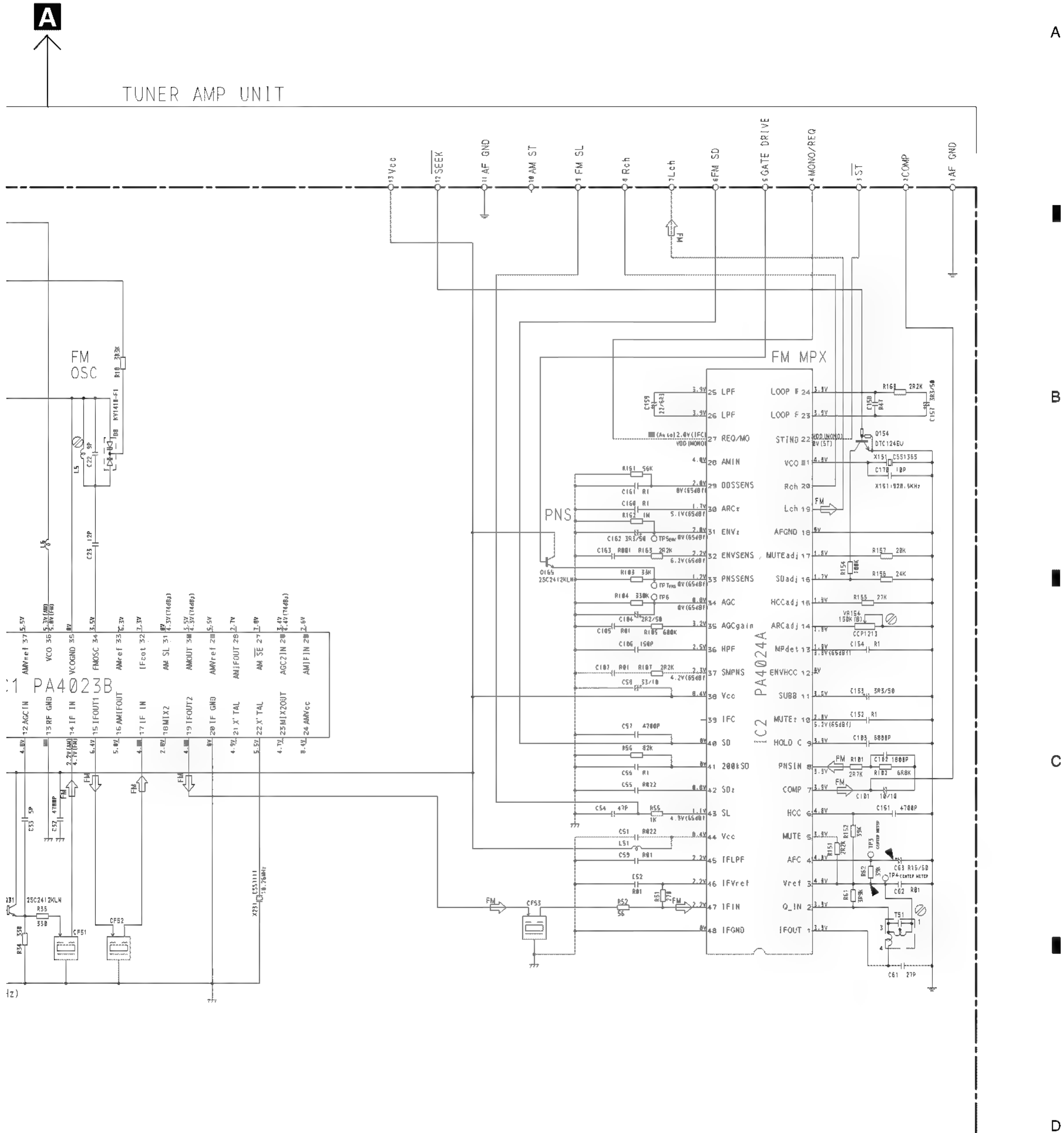


Fig. 7

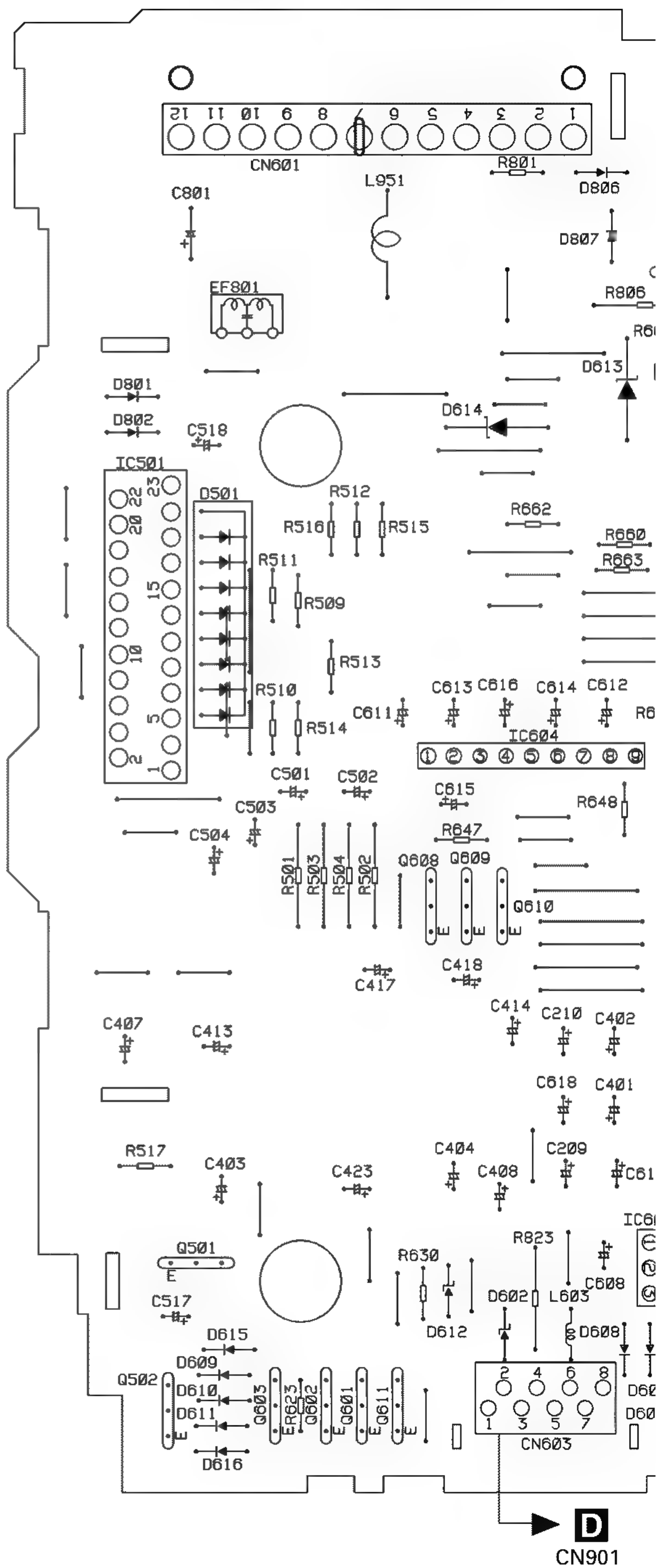
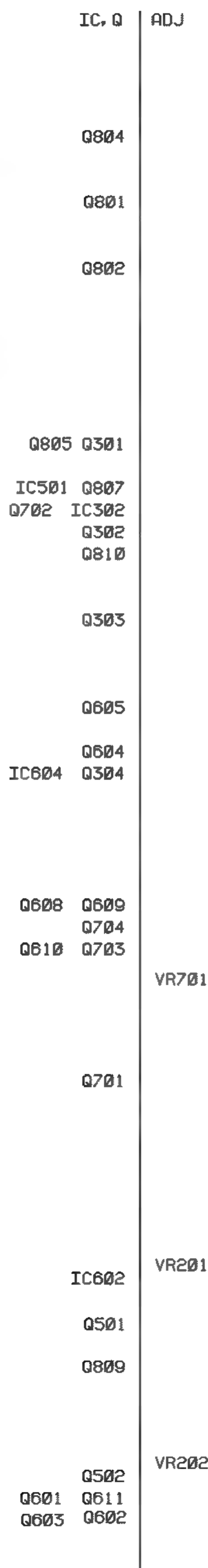
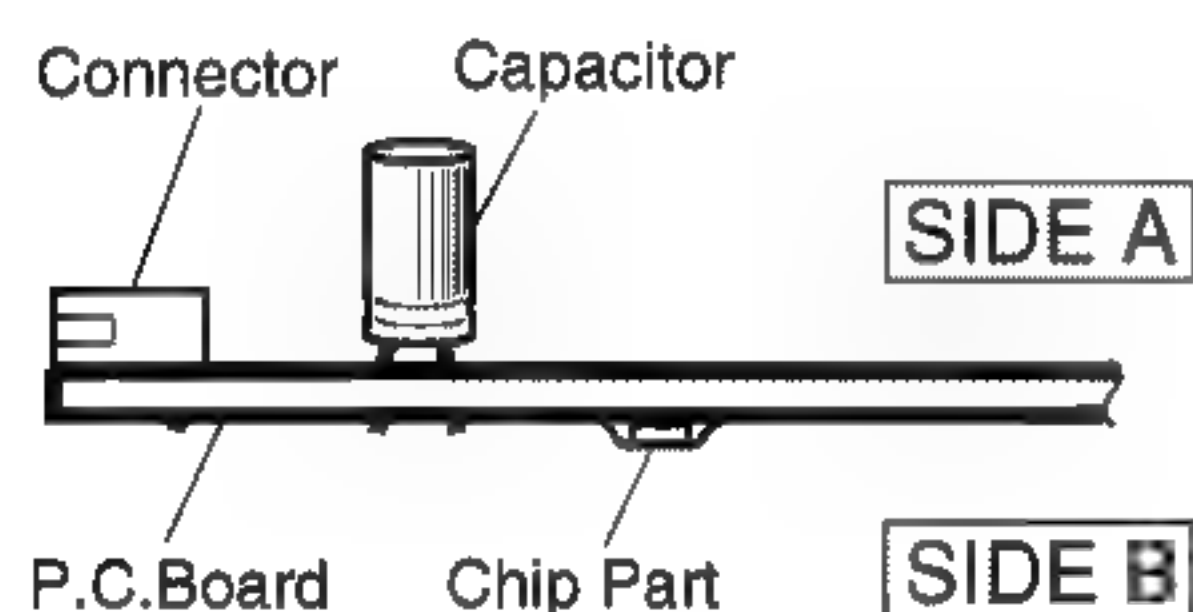
#### 4. PCB CONNECTION DIAGRAM

## 4.1 TUNER AMP UNIT

### NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination.  
For further information for respective destinations, be sure to check with the schematic diagram.

- ## 2. Viewpoint of PCB diagrams





SIDE A

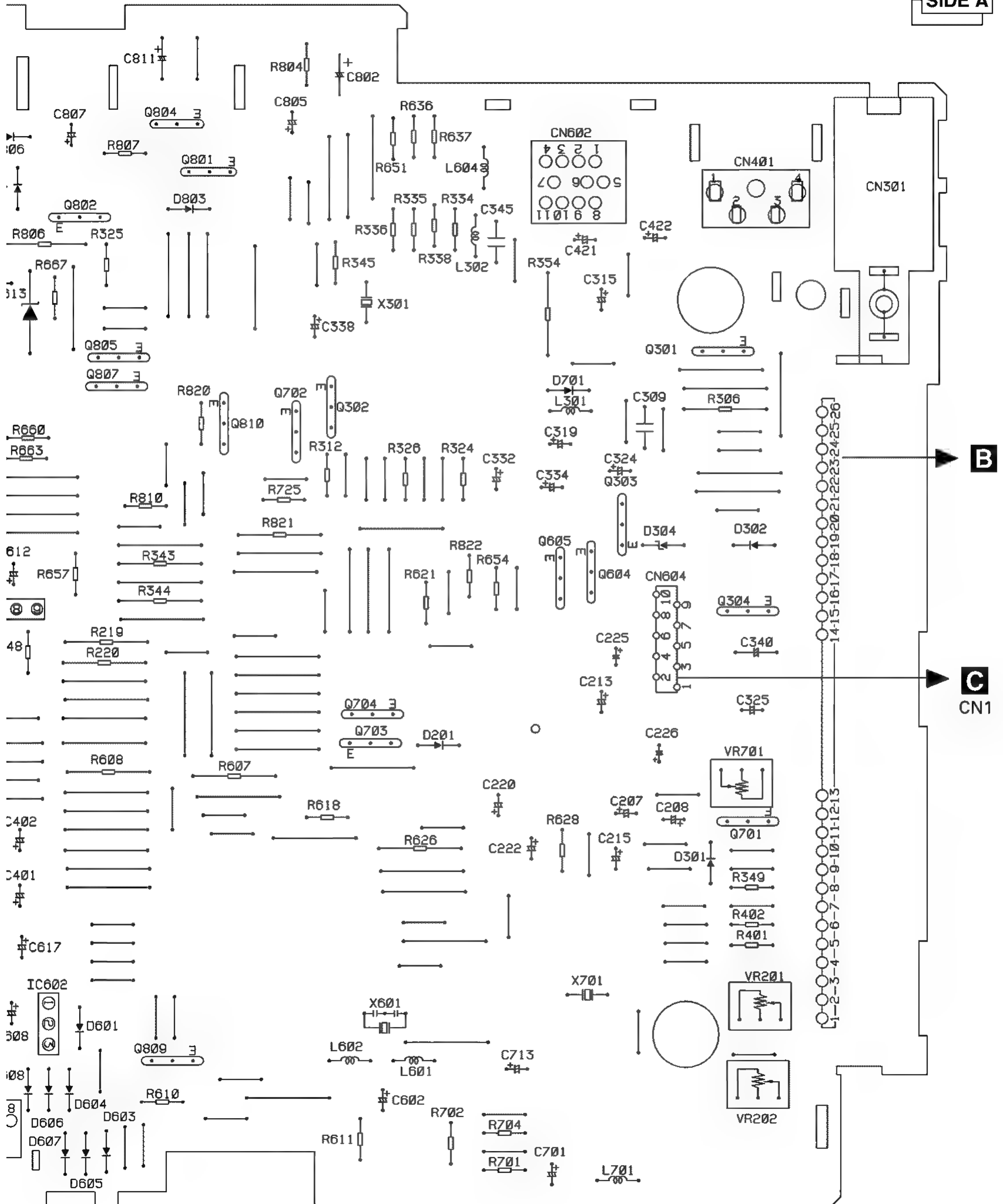
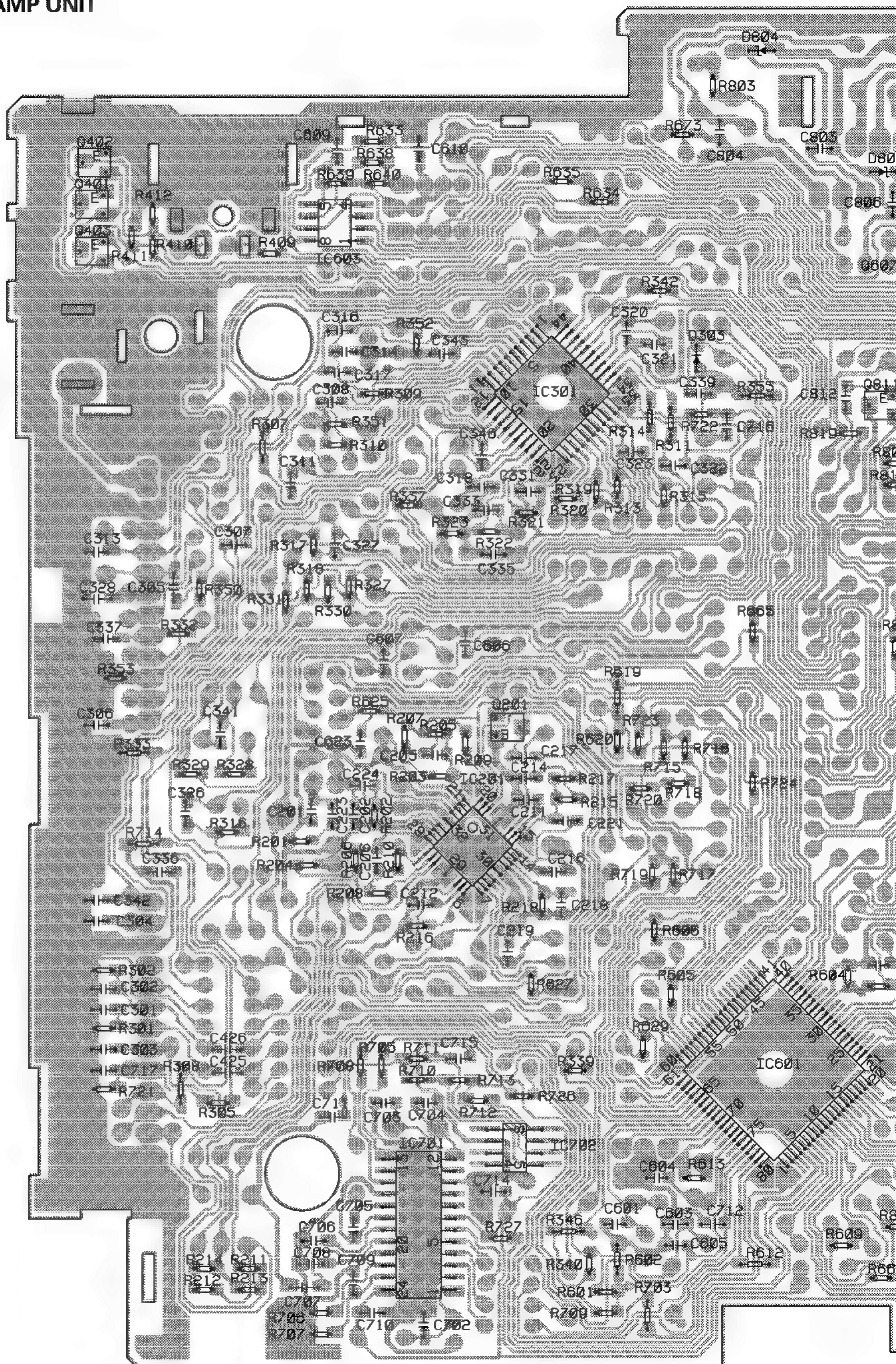


Fig.8

A



**A** TUNER AMP UNIT





SIDE B

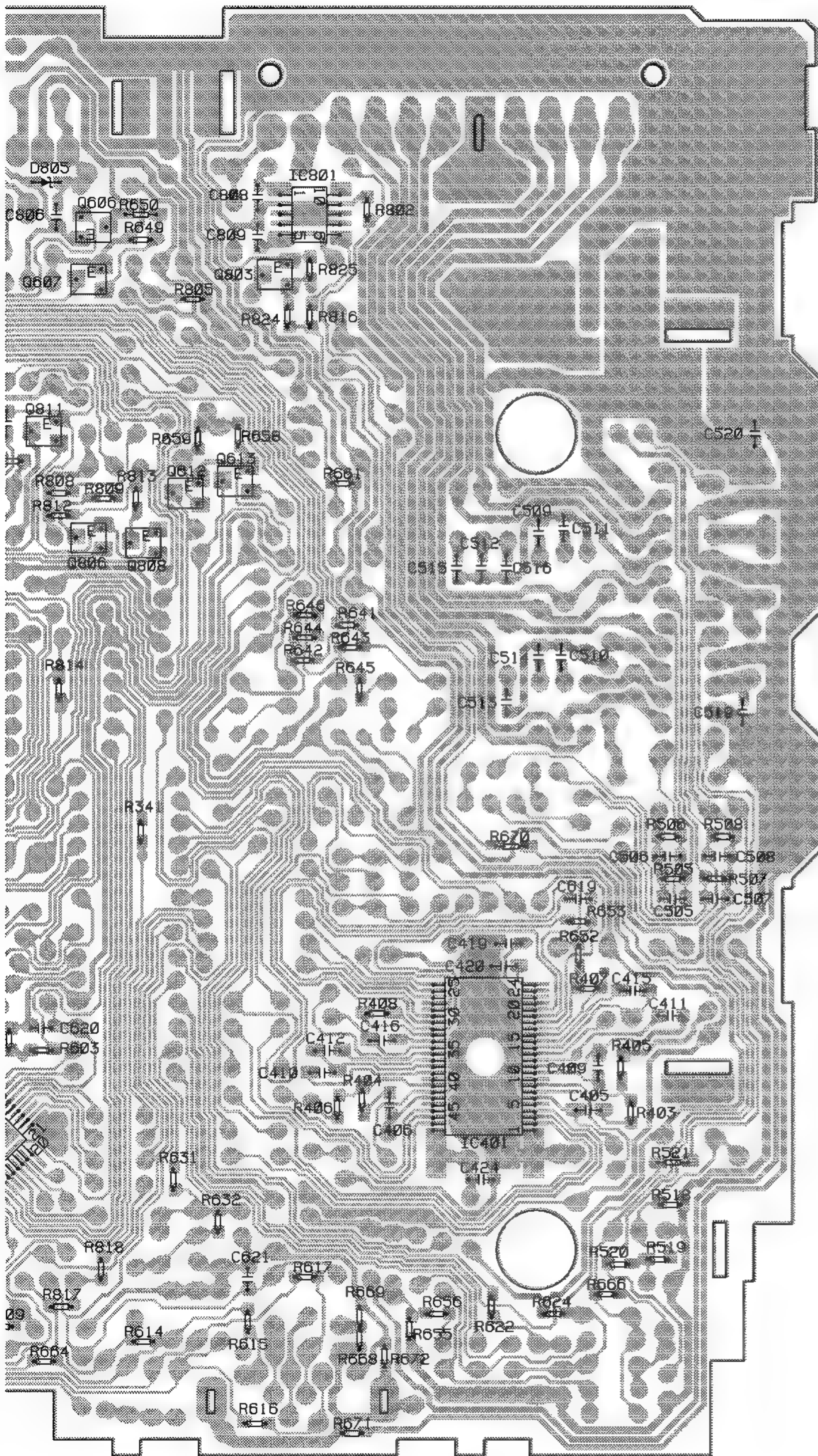


Fig. 9



## D

## 1

2



4





### 4.3 CASSETTE PCB

#### C CASSETTE PCB

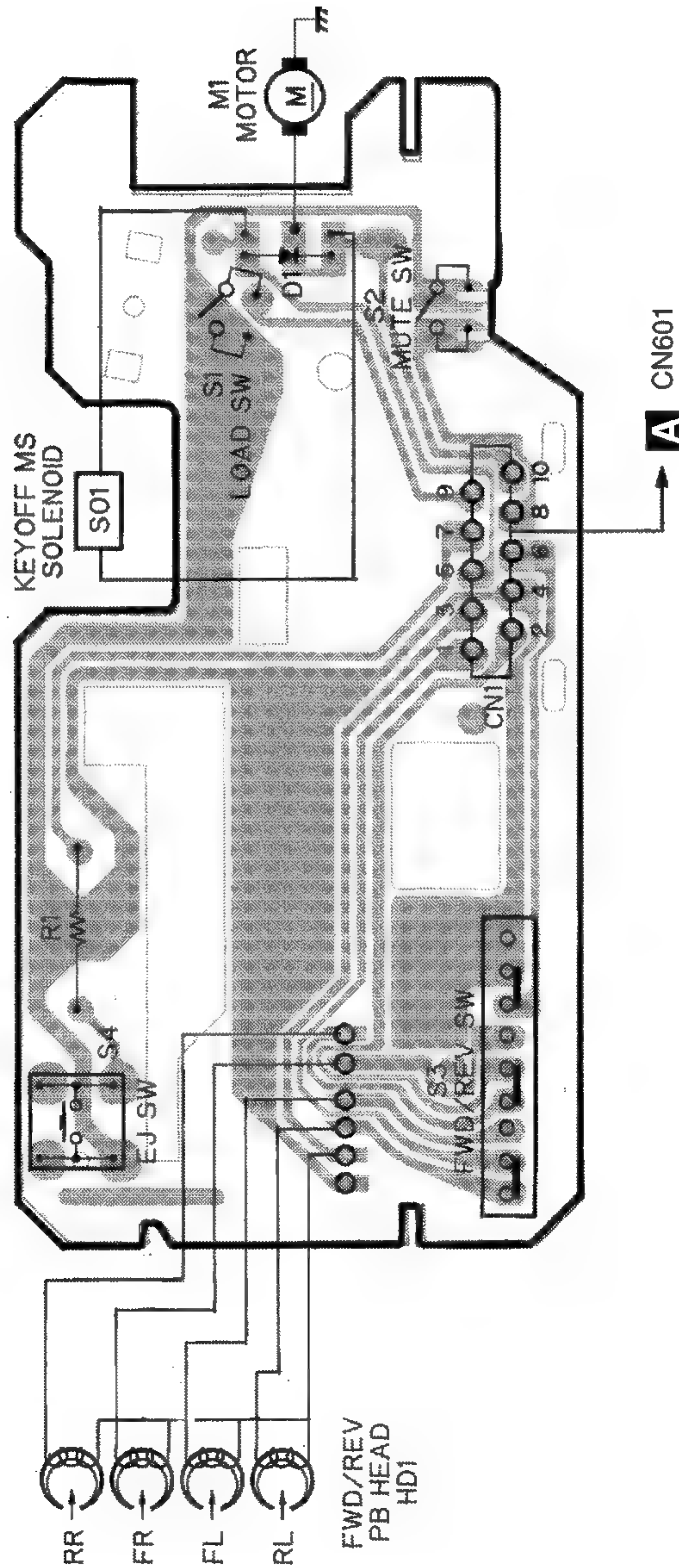


Fig. 12



## FM/AM TUNER UNIT

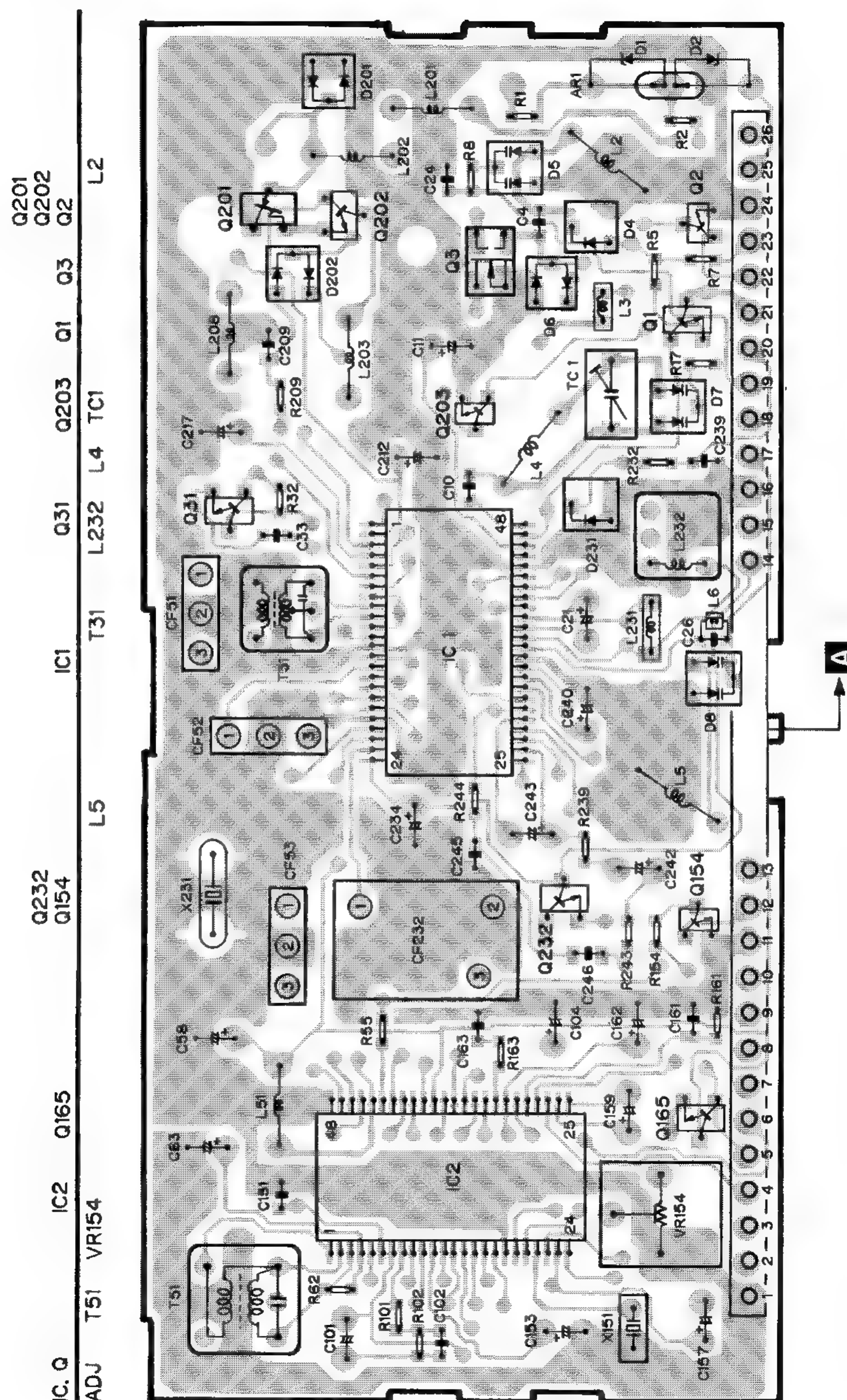
**SIDE A**

Fig. 13



**B** FM/AM TUNER UNIT

SIDE B

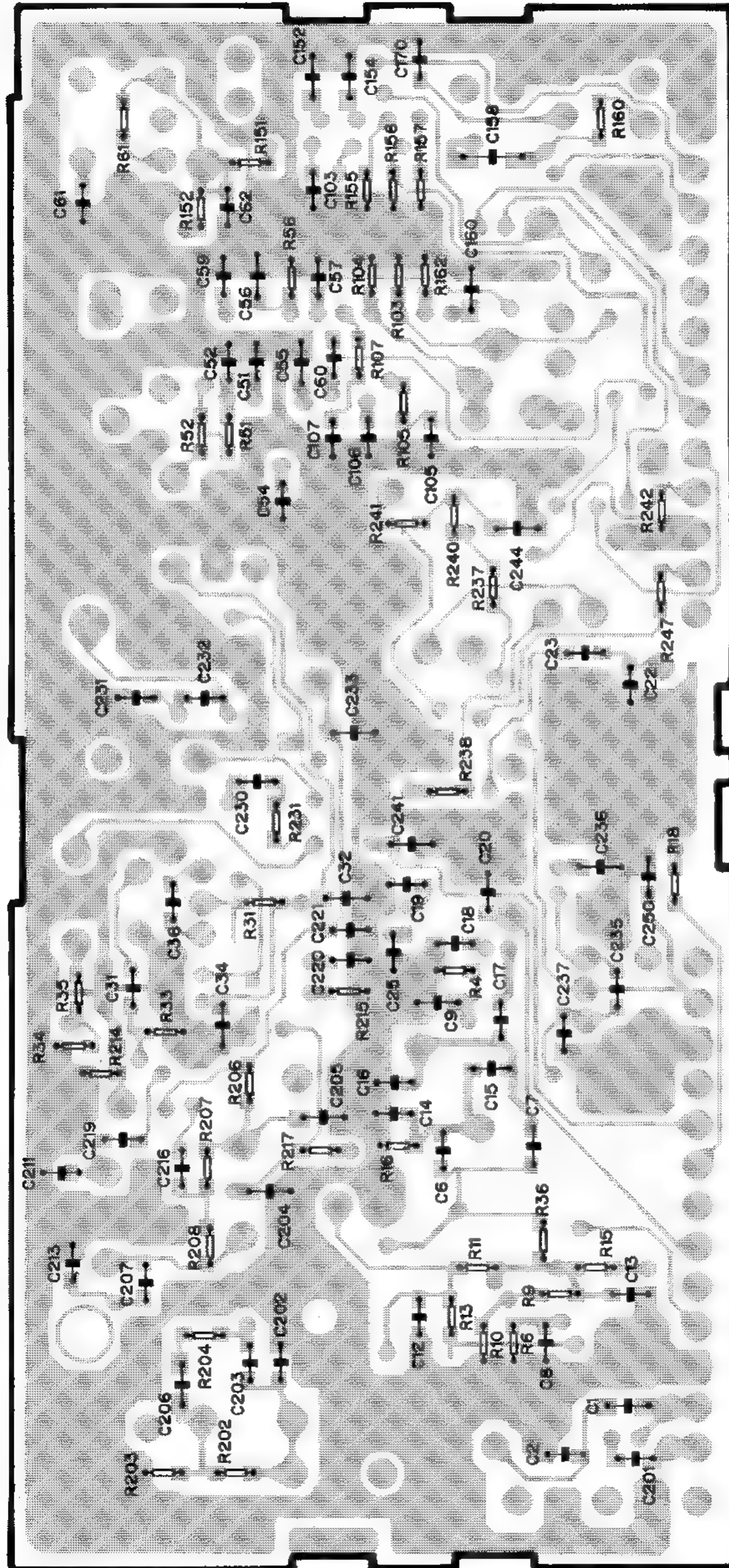


Fig. 14



5. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

Chip Resistor  
RS1/○S○○○○J,RS1/○○S○○○○J  
Chip Capacitor (except for CQS.....)  
CKS....., CCS....., CSZS.....

====Circuit Symbol and No.===Part Name			Part No.	====Circuit Symbol and No.===Part Name			Part No.
A	Unit Number	:	CWM5518(KEH-P27R/X1M/GR)	D	602	Diode	HZS7L(A1)
	Unit Number	:	CWM5522(KEH-2720R/X1M/GR)	D	603	Diode	1SS270
	Unit Name	:	Tuner Amp Unit	D	604	Diode	1SS270
MISCELLANEOUS				D	605	Diode	1SS270
IC	201	IC	HA12197F	D	606	Diode	1SS270
IC	301	IC	PM2007A	D	607	Diode	1SS270
IC	401	IC	SN761027DL	D	608	Diode	1SS270
IC	501	IC	HA13155	D	609	Diode	1SS270
IC	601	IC(KEH-P27R/X1M/GR)	PD4872B	D	610	Diode	1SS270
IC	601	IC(KEH-2720R/X1M/GR)	PD4879B	D	611	Diode	1SS270
IC	602	IC	S-80734AN	D	612	Diode	HZS9L(A2)
IC	603	IC(KEH-P27R/X1M/GR)	CA0008AM	D	613	Diode	HZS7L(C3)
IC	604	IC(KEH-P27R/X1M/GR)	TA2050S	D	614	Diode	HZS7L(A1)
IC	701	IC	PM4006B	D	615	Diode	1SS270
IC	701	IC	PM4006B	D	616	Diode	1SS270
IC	702	IC	NJM2903M	D	701	Diode	1SS270
IC	801	IC	TPD1018F	D	801	Diode	1SR139-400
Q	301	Transistor	2SC1740S	D	802	Diode	1SR139-400
Q	401	Transistor(KEH-P27R/X1M/GR)	DTC143TK	D	803	Diode	1SR139-400
Q	402	Transistor(KEH-P27R/X1M/GR)	DTC143TK	D	804	Diode	MA8056(H)
Q	403	Transistor(KEH-P27R/X1M/GR)	DTA124EK	D	805	Diode	MA8091(M)
Q	501	Transistor	DTC124ES	D	806	Diode	1SR139-400
Q	502	Transistor	DTC124ES	D	807	Diode	1SR139-400
Q	601	Transistor	DTC143TS	L	301	Ferri-Inductor	LAU101K
Q	602	Transistor	DTC124ES	L	302	Ferri-Inductor	LAU101K
Q	603	Transistor	2SC1740S	L	601	Ferri-Inductor	LAU101K
Q	606	Transistor(KEH-P27R/X1M/GR)	DTC114EK	L	602	Ferri-Inductor	LAU101K
Q	607	Transistor(KEH-P27R/X1M/GR)	2SA1037K	L	603	Ferri-Inductor	LAU101K
Q	608	Transistor	DTA124ES	L	604	Ferri-Inductor(KEH-P27R/X1M/GR)	LAU2R2K
Q	609	Transistor	DTC143TS	L	701	Ferri-Inductor	LAU101K
Q	610	Transistor	DTC143TS	L	951	Choke Coil 600H	CTH1168
Q	611	Transistor	2SC1740S	X	301	Crystal Resonator 7.200MHz	CSS1379
Q	612	Transistor	2SC2412K	X	601	Ceramic Resonator 6.29MHz	CSS1310
Q	613	Transistor	2SC2412K			(KEH-P27R/X1M/GR)	
Q	701	Transistor	DTC143TS	X	601	Ceramic Resonator 4.194MHz	CSS1047
						(KEH-2720R/X1M/GR)	
Q	702	Transistor	2SC1740S	X	701	Crystal Resonator 4.332MHz	CSS1056
Q	703	Transistor	2SD1468S	VR	701	Semi-fixed 22kΩ(B)	CCP1321
Q	704	Transistor	2SD1468S	FU	951	Fuse 10A	CEK1136
Q	801	Transistor	2SD2037	RESISTORS			
Q	802	Transistor	2SB1243	R	201		RS1/10S473J
Q	803	Transistor	2SC2412K	R	202		RS1/10S473J
Q	804	Transistor	2SD2396	R	203		RS1/10S181J
Q	807	Transistor	2SA1674	R	204		RS1/10S181J
Q	808	Transistor	2SC2412K	R	205		RS1/10S274J
Q	809	Transistor	2SA933S	R	206		RS1/10S274J
Q	810	Transistor	2SB1242	R	207		RS1/10S133J
Q	811	Transistor	DTC143TK	R	208		RS1/10S133J
D	201	Diode	1SS270	R	209		RS1/10S183J
D	501	Compound Parts	CWW1352	R	210		RS1/10S183J
D	601	Diode	1SS270				



====Circuit Symbol and No.====Part Name	Part No.	====Circuit Symbol and No.====Part Name	Part No.
R 211	RS1/10S472J	R 510	RD1/4PU2R2J
R 212	RS1/10S472J	R 511	RD1/4PU2R2J
R 213	RS1/10S512J	R 512	RD1/4PU2R2J
R 214	RS1/10S512J	R 513	RD1/4PU2R2J
R 219	RD1/4PU273J	R 514	RD1/4PU2R2J
R 220	RD1/4PU273J	R 515	RD1/4PU2R2J
R 301	RS1/10S272J	R 516	RD1/4PU2R2J
R 302	RS1/10S272J	R 517	RD1/4PU103J
R 305	RS1/10S0R0J	R 518	RS1/10S153J
R 306	RD1/4PU222J	R 519	RS1/10S221J
R 307	RS1/8S222J	R 520	RS1/10S101J
R 308	RS1/8S222J	R 521	RS1/8S103J
R 310	RS1/10S0R0J	R 601	RS1/10S104J
R 311	RS1/8S272J	R 602	RS1/8S104J
R 312	RD1/4PU222J	R 603	RS1/10S473J
R 314	RS1/8S0R0J	R 605	(KEH-P27R/X1M/GR)
R 315	RS1/10S0R0J	R 607	(KEH-P27R/X1M/GR)
R 318	RS1/10S0R0J	R 610	RS1/10S0R0J
R 319	RS1/10S472J	R 612	RD1/4PU0R0J
R 320	RS1/10S682J	R 613	RD1/4PU473J
R 321	RS1/10S222J	R 614	RS1/8S473J
R 322	RS1/10S472J	R 615	RS1/10S473J
R 323	RS1/10S682J	R 616	RS1/10S222J
R 324	RD1/4PU102J	R 617	RS1/10S222J
R 326	RD1/4PU0R0J	R 618	RD1/4PU103J
R 328	RS1/10S561J	R 619	RS1/8S473J
R 333	RS1/8S393J	R 620	RS1/10S473J
R 334	RD1/4PU562J	R 621	RD1/4PU104J
R 335	RD1/4PU472J	R 622	RS1/10S473J
R 336	RD1/4PU473J	R 623	RD1/4PU473J
R 337	RS1/10S473J	R 624	RS1/10S332J
R 338	RD1/4PU104J	R 625	RS1/10S102J
R 339	RS1/10S473J	R 629	RS1/10S103J
R 340	RS1/10S473J	R 630	RD1/4PU152J
R 341	RS1/10S681J	R 631	RS1/10S102J
R 342	RS1/10S681J	R 632	RS1/10S124J
R 343	RD1/4PU681J	R 633	RS1/10S102J
R 344	RD1/4PU681J	R 634	RS1/10S102J
R 345	RD1/4PU222J	R 635	RS1/10S102J
R 346	RS1/8S472J	R 636	RD1/4PU473J
R 349	RD1/4PU102J	R 637	RD1/4PU473J
R 350	RS1/10S510J	R 638	RS1/10S101J
R 352	RS1/10S0R0J	R 639	RS1/10S101J
R 353	RS1/10S0R0J	R 640	RS1/10S620J
R 354	RD1/4PU102J	R 641	RS1/10S181J
R 355	RS1/8S0R0J	R 642	RS1/10S181J
R 403	RS1/10S272J	R 643	RS1/10S223J
R 404	RS1/10S272J	R 644	RS1/10S223J
R 405	RS1/10S151J	R 645	RS1/10S102J
R 406	RS1/10S151J	R 646	RS1/10S102J
R 407	RS1/10S221J	R 647	RD1/4PU223J
R 408	RS1/10S221J	R 648	RD1/4PU223J
R 409	(KEH-P27R/X1M/GR)	R 649	RS1/10S223J
R 410	(KEH-P27R/X1M/GR)	R 650	RS1/8S472J
R 411	(KEH-P27R/X1M/GR)	R 651	RD1/4PU222J
R 412	(KEH-P27R/X1M/GR)	R 652	RS1/10S104J
R 501	RD1/4PU202J	R 653	RS1/10S104J
R 502	RD1/4PU202J	R 655	RS1/10S223J
R 503	RD1/4PU202J	R 656	RS1/10S103J
R 504	RD1/4PU202J	R 657	RD1/4PU472J
R 505	RS1/10S222J	R 658	RS1/10S473J
R 506	RS1/10S222J	R 659	RS1/10S223J
R 507	RS1/10S222J	R 660	RD1/4PU473J
R 508	RS1/10S222J	R 661	RS1/10S473J
R 509	RD1/4PU2R2J	R 662	RD1/4PU223J

# KEH-P27R,2720R

====Circuit Symbol and No.==Part Name	Part No.	====Circuit Symbol and No.==Part Name	Part No.
R 663	RD1/4PU473J	C 220	CEAL100M16
R 664	RS1/10S222J	C 223	CKSQYB105K10
R 665 (KEH-P27R/X1M/GR)	RS1/10S102J	C 224	CKSQYB105K10
R 667 (KEH-P27R/X1M/GR)	RD1/4PU103J	C 225	CEAL470M6R3
R 668	RS1/10S0R0J	C 226	CEAL470M6R3
R 670 (KEH-P27R/X1M/GR)	RS1/8S0R0J	C 301	CKSQYB223K25
R 673	RS1/10S0R0J	C 302	CKSQYB223K25
R 701	RD1/4PU102J	C 303	CKSQYB223K25
R 702	RD1/4PU102J	C 308	CCSQCH101K50
R 703	RS1/8S102J	C 311	CCSQCH101K50
R 704	RD1/4PU102J	C 313	CKSQYB223K25
R 705	RS1/10S102J	C 314	CKSQYB103K25
R 706	RS1/10S0R0J	C 315	CEAL220M6R3
R 707	RS1/10S333J	C 316	CKSQYB103K25
R 708	RS1/10S102J	C 318	CKSQYB102K50
R 709	RS1/10S562J	C 319	CEAL220M16
R 710	RS1/10S222J	C 320	CCSQCH150J50
R 711	RS1/10S222J	C 321	CCSQCH150J50
R 712	RS1/10S562J	C 322	CKSQYB103K25
R 713	RS1/10S684J	C 331	CKSQYB104K16
R 714	RS1/8S103J	C 332	CEAL220M6R3
R 715	RS1/10S224J	C 333	CKSQYB103K25
R 716	RS1/10S224J	C 334	CEAL220M6R3
R 717	RS1/10S222J	C 335	CKSQYB103K25
R 718	RS1/10S222J	C 336	CKSQYB223K25
R 719	RS1/10S223J	C 340	4.7μF/16V
R 720	RS1/10S223J	C 341	CCH1165
R 721	RS1/10S105J	C 342	CKSQYB103K25
R 722	RS1/10S224J	C 343	CKSQYB473K16
R 723	RS1/10S562J	C 401	CKSQYB102K50
R 724	RS1/10S681J	C 402	CEJA2R2M50
R 725	RD1/4PU681J	C 403	CEJA100M16
R 726	RS1/10S681J	C 404	CEJA100M16
R 727	RS1/10S102J	C 405	CKSQYB822K50
R 801	RD1/4PU102J	C 406	CKSQYB822K50
R 802	RS1/10S472J	C 407	CEJA1R0M50
R 803	RS1/10S101J	C 408	CEJA1R0M50
R 804	RD1/4PU332J	C 409	CKSQYB183K25
R 805	RS1/10S103J	C 410	CKSQYB183K25
R 806	RD1/4PU102J	C 411	CKSQYB102K50
R 807	RD1/4PU122J	C 412	CKSQYB102K50
R 812	RS1/10S103J	C 413	CEJA2R2M50
R 813	RS1/10S102J	C 414	CEJA2R2M50
R 814	RS1/10S473J	C 415	CKSQYB333K25
R 816	RS1/10S472J	C 416	CKSQYB333K25
R 817	RS1/10S223J	C 417	CEJA220M6R3
R 818	RS1/10S222J	C 418	CEJA2R2M50
R 819	RS1/10S472J	C 419	CKSQYB104K16
R 820	RD1/4PU102J	C 420	CKSQYB103K25
R 821	RD1/4PU1R5J	C 421	(KEH-P27R/X1M/GR)
R 822	RD1/4PU1R5J	C 422	(KEH-P27R/X1M/GR)
R 823	RD1/4PU1R0J	C 423	CEJA2R2M50
R 824	RS1/10S103J	C 424	CEJA470M10
R 825	RS1/10S103J	C 425	CKSQYB104K16
		C 426	CKSYB105K16
CAPACITORS		C 501	CEJA4R7M35
C 201	CKSQYB561K50	C 502	CEJA4R7M35
C 202	CKSQYB561K50	C 503	CEJA4R7M35
C 205	CKSQYB103K25	C 504	CEJA4R7M35
C 206	CKSQYB103K25	C 505	CKSQYB102K50
C 207	CEALR47M50	C 506	CKSQYB102K50
C 208	CEALR47M50	C 507	CKSQYB102K50
C 209	CEJA1R0M50	C 508	CKSQYB102K50
C 210	CEJA1R0M50	C 509	CKSQYB104K16
C 213	CEAL220M16	C 510	CKSQYB104K16
C 219	CKSQYB104K16		







KEH-P27R,272OR

====Circuit Symbol and No.===Part Name			Part No.	====Circuit Symbol and No.===Part Name			Part No.
Q	31	Transistor	2SC2412KLN	R	163		RS1/16S222J
Q	154	Transistor	DTC124EU	CAPACITORS			
Q	165	Transistor	2SC2412KLN	C	1		CCSQCH6R0D50
D	4	Diode	1SV250	C	2		CCSRCK2R0C50
D	5	Diode	KV1410-F1	C	4		CCSRCH820J50
D	6	Diode	MA157	C	6		CCSRCH820J50
D	7	Diode	KV1410-F1	C	8		CKSRYB103K25
D	8	Diode	KV1410-F1	C	9		CKSQYB104K16
L	2	Coil	CTC1133	C	10		CCSRCKR50C50
L	3	Inductor	LCTB2R2K2125	C	11		CEJA1R0M50
L	4	Coil	CTC1133	C	12		CKSRYB222K50
L	5	Coil	CTC1132	C	13		CKSRYB222K50
L	6	Inductor	LCTBR15K1608	C	14		CCSRCH220J50
L	51	Ferri-Inductor	LAU150K	C	16		CCSRCH8R0D50
T	31	Coil	CTE1117	C	17		CKSRYB222K50
T	51	Coil	CTC1136	C	18		CKSRYB103K25
TC	1	Trimmer	CCL1046	C	19		CKSRYB222K50
CF	51	Ceramic Filter	CTF1292	C	20		CKSRYB222K50
CF	52	Ceramic Filter	CTF1292	C	21		CEJA100M16
CF	53	Ceramic Filter	CTF1292	C	22		CCSRTH9R0D50
X	151	Resonator 920.5kHz	CSS1365	C	23		CCSRTH120J50
X	231	Crystal Resonator 10.26MHz	CSS1111	C	24		CCSRCH471J50
VR	154	Semi-fixed 150kΩ(B)	CCP1213	C	25		CKSRYB103K25
AR	1	Capacitor with Discharge Gap	DSP-201M	C	31		CKSRYB103K25
RESISTORS				C	32		CKSQYB472K50
R	1		RS1/16S0R0J	C	33		CCSRCH5R0C50
R	4		RS1/16S154J	C	34		CKSQYB104K16
R	5		RS1/16S391J	C	36		CCSRRH201J50
R	6		RS1/16S223J	C	51		CKSRYB223K25
R	7		RS1/16S123J	C	52		CKSRYB103K25
R	8		RS1/16S332J	C	54		CCSRCH470J50
R	9		RS1/16S473J	C	55		CKSQYB223K25
R	10		RS1/16S223J	C	56		CKSQYB104K16
R	11		RS1/16S124J	C	57		CKSRYB472K50
R	13		RS1/16S563J	C	58		CEJA330M10
R	15		RS1/16S271J	C	59		CKSRYB103K25
R	16		RS1/16S104J	C	61		CCSRCH270J50
R	17		RS1/16S332J	C	62		CKSRYB103K25
R	18		RS1/16S332J	C	63		CEJAR15M50
R	31		RS1/16S470J	C	101		CEJANP100M10
R	32		RS1/16S822J	C	102		CKSRYB182K50
R	33		RS1/16S822J	C	103		CKSRYB682K25
R	34		RS1/16S331J	C	104		CEJA2R2M50
R	35		RS1/16S331J	C	105		CKSRYB103K25
R	51		RS1/16S271J	C	106		CCSRCH151J50
R	52		RS1/16S560J	C	107		CKSRYB103K25
R	55		RS1/16S102J	C	151		CKSRYB472K50
R	56		RS1/16S823J	C	152		CKSQYB104K16
R	61		RS1/16S392J	C	153		CEJA3R3M50
R	62		RS1/16S393J	C	154		CKSQYB104K16
R	101		RS1/16S272J	C	157		CEJA3R3M50
R	102		RS1/16S682J	C	158		CKSYB474K16
R	103		RS1/16S333J	C	159		CEJA220M6R3
R	104		RS1/16S334J	C	160		CKSQYB104K16
R	105		RS1/16S683J	C	161		CKSQYB104K16
R	107		RS1/16S222J	C	162		CEJA3R3M50
R	151		RS1/16S222J	C	163		CKSRYB102K50
R	152		RS1/16S393J	C	170		CCSRCH100D50
R	154		RS1/16S104J				
R	155		RS1/16S273J				
R	156		RS1/16S243J				
R	157		RS1/16S203J				
R	160		RS1/16S222J				
R	161		RS1/16S563J				
R	162		RS1/16S105J				



## 6. ADJUSTMENT

### ● Connection Diagram

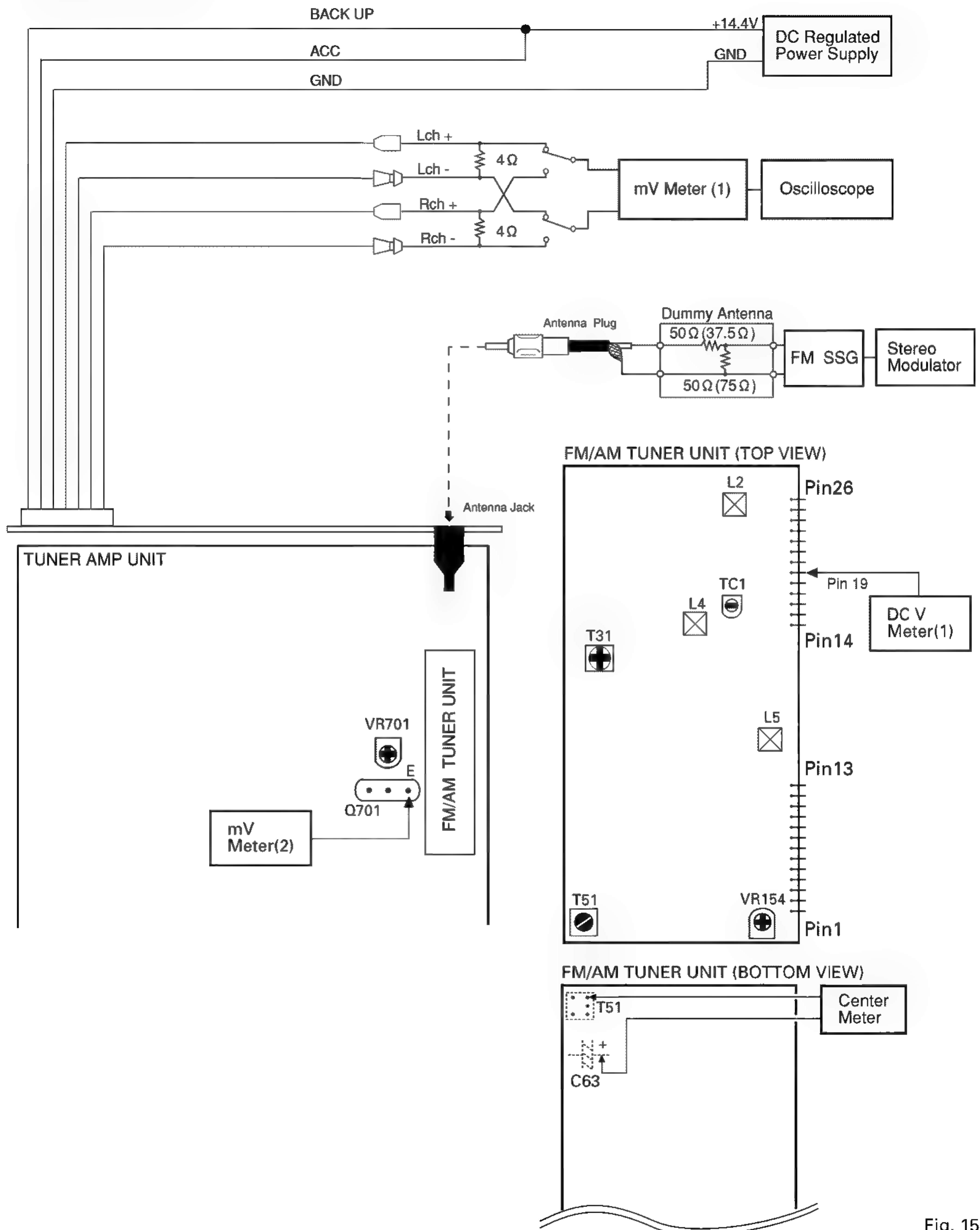


Fig. 15



FM ADJUSTMENT

Modulation M:MONO MOD., 400Hz 30%(22.5kHz Dev.) or 400Hz 100%(75kHz Dev.)  
S:STEREO MOD., 1kHz, L or R=30%(20.25kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

FM ADJUSTMENT

	No.	FM SSG		Displayed	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dBf)	Frequency(MHz)		
TUN Volt	1	*****	*****	107.9	L5	DC V Meter(1) : 6V
IF	2	98.1 M	60	98.1	T51	Center Meter : 0
ANT Coil	3	98.1 M	5	98.1	L2	mV Meter(1) : Maximum
RF Coil	4	98.1 M	5	98.1	L4	mV Meter(1) : Maximum
Image	5	129.3 M	60-80	107.9	TC1	mV Meter(1) : Maximum
IFT	6	98.1 M	5	98.1	T31	mV Meter(1) : Maximum (STEREO MODE)
ARC	7	98.1 S	40	98.1	VR154	mV Meter(1) : Separation 5dB (STEREO MODE)

RDS SL ADJUSTMENT

	No.	FM SSG		Displayed	Adjustment Point	Adjustment Method (Switch Position)
		Frequency(MHz)	Level(dBf)	Frequency(MHz)		
	1	104.0 S2	35	104.0	VR701	DC V Meter(2) : 1.75V+0.05V, -0.35V

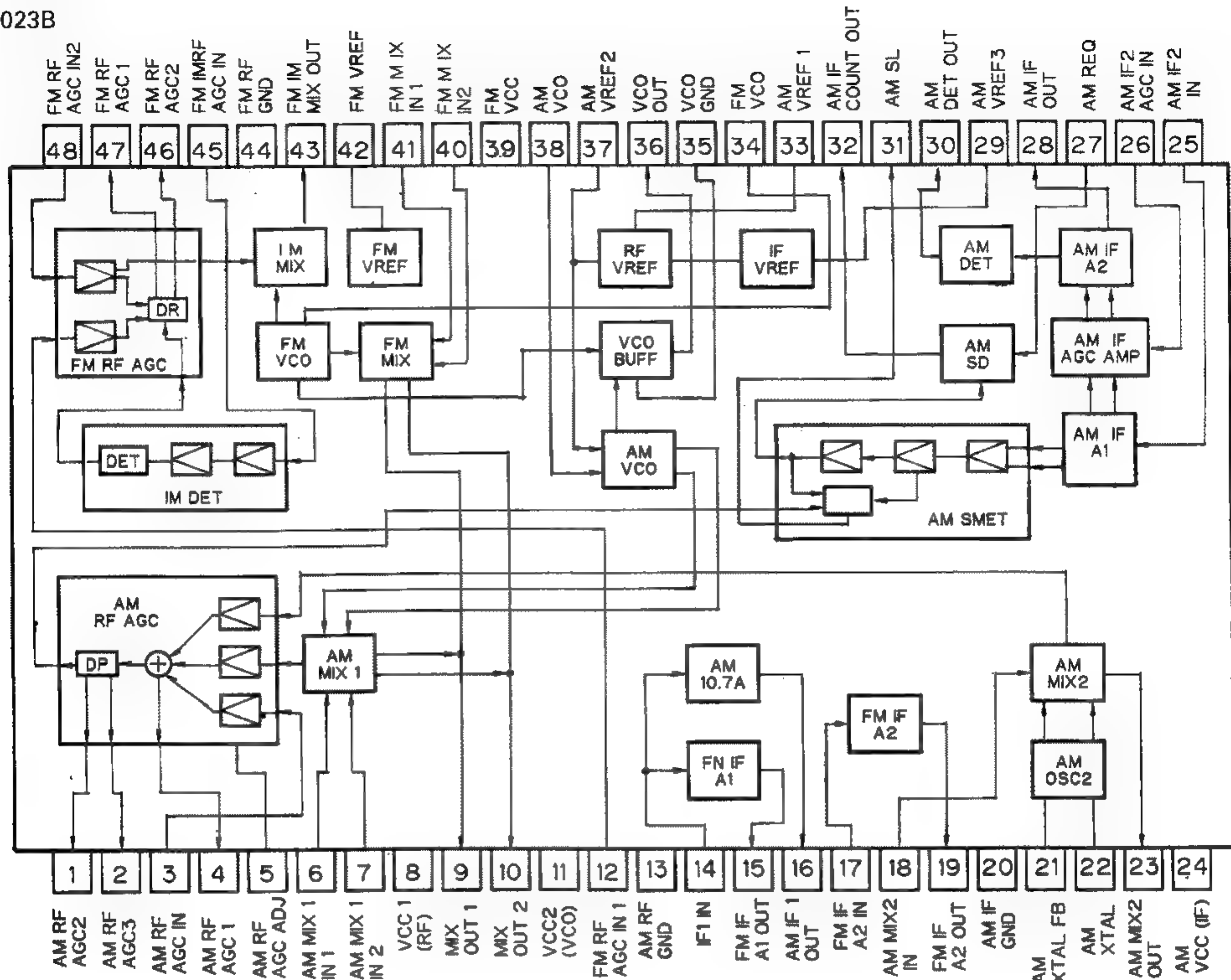


## 7. GENERAL INFORMATION

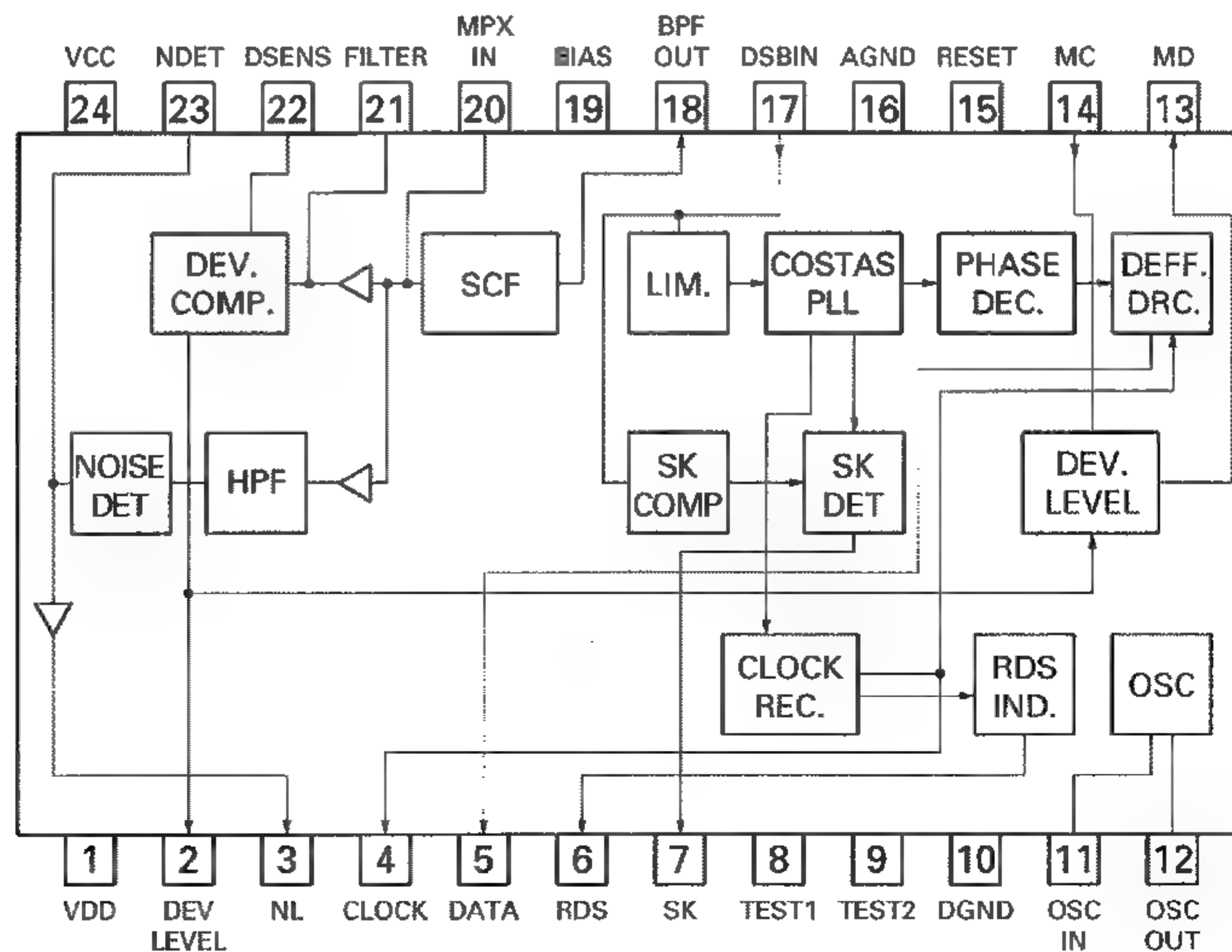
### 7.1 PARTS

#### 7.1.1 IC

PA4023B

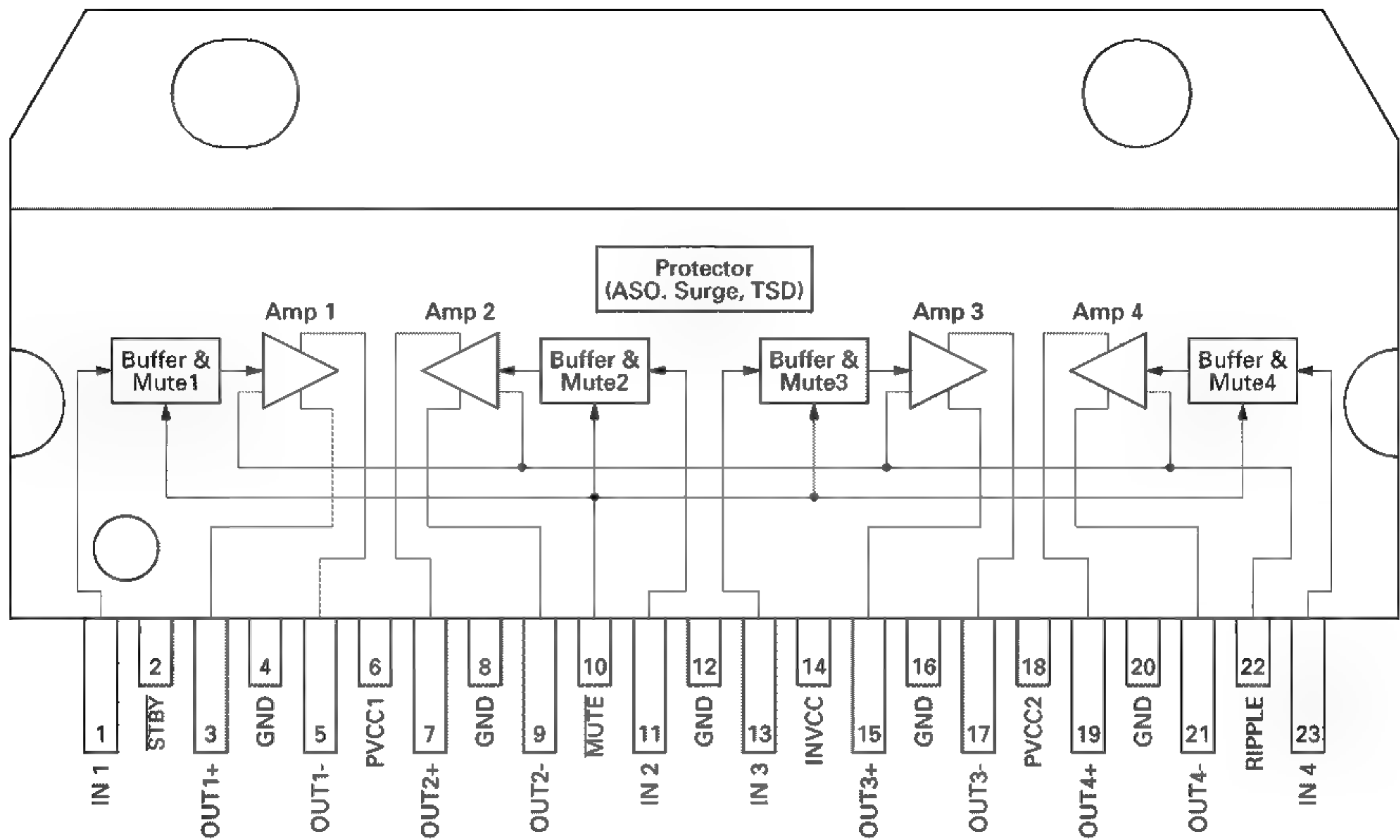


PM4006B

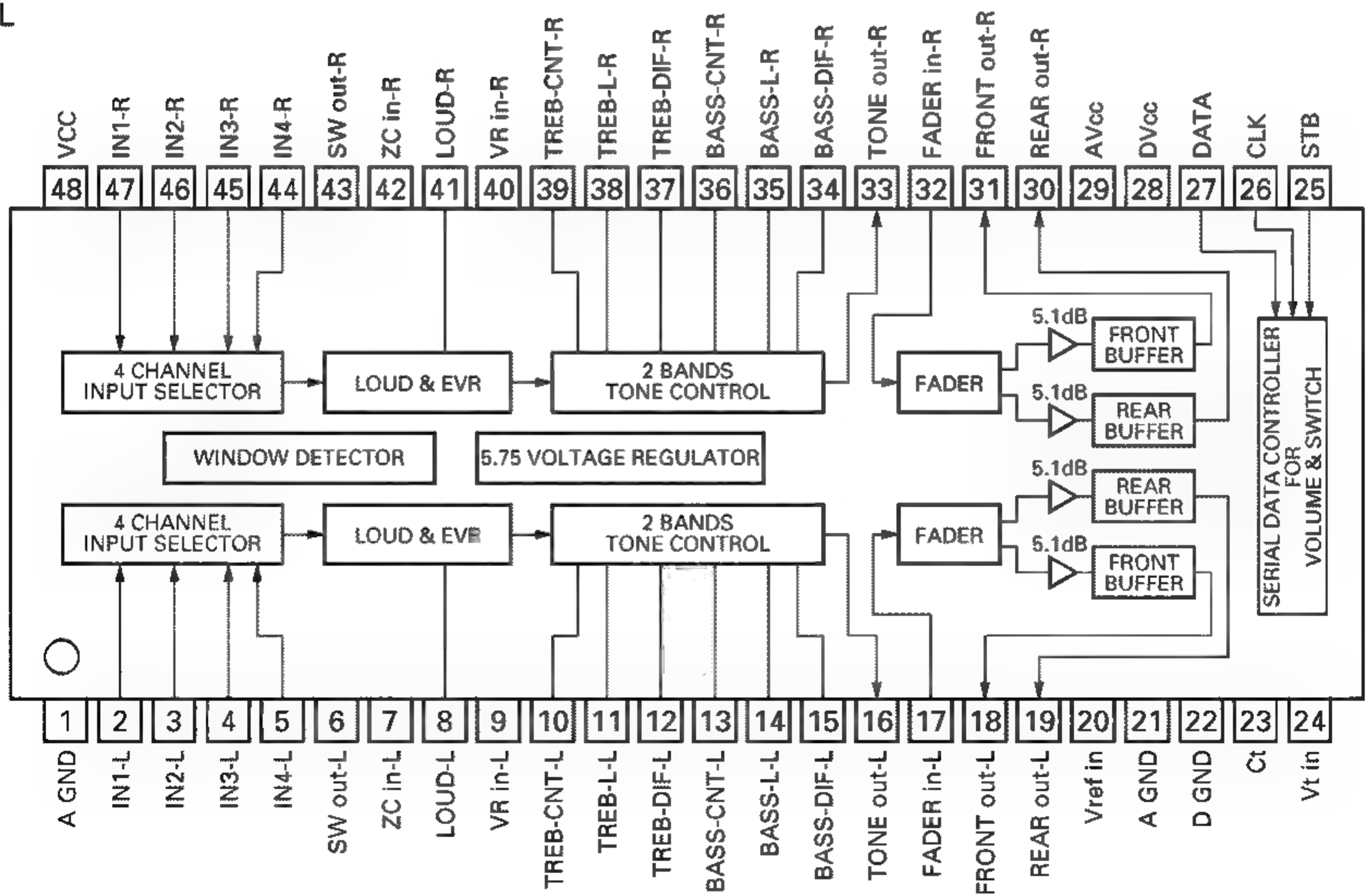




HA13155

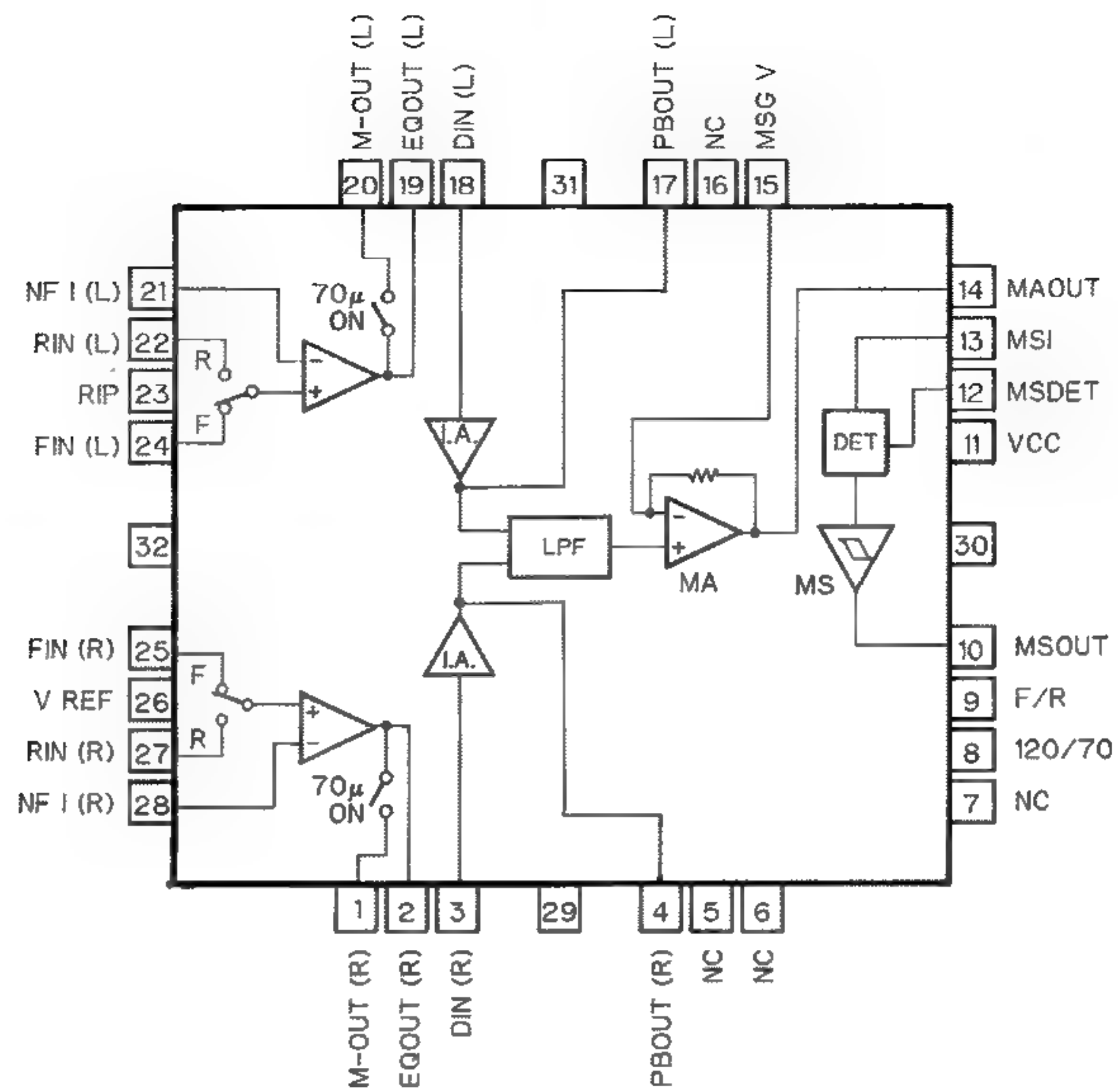


SN761027DL

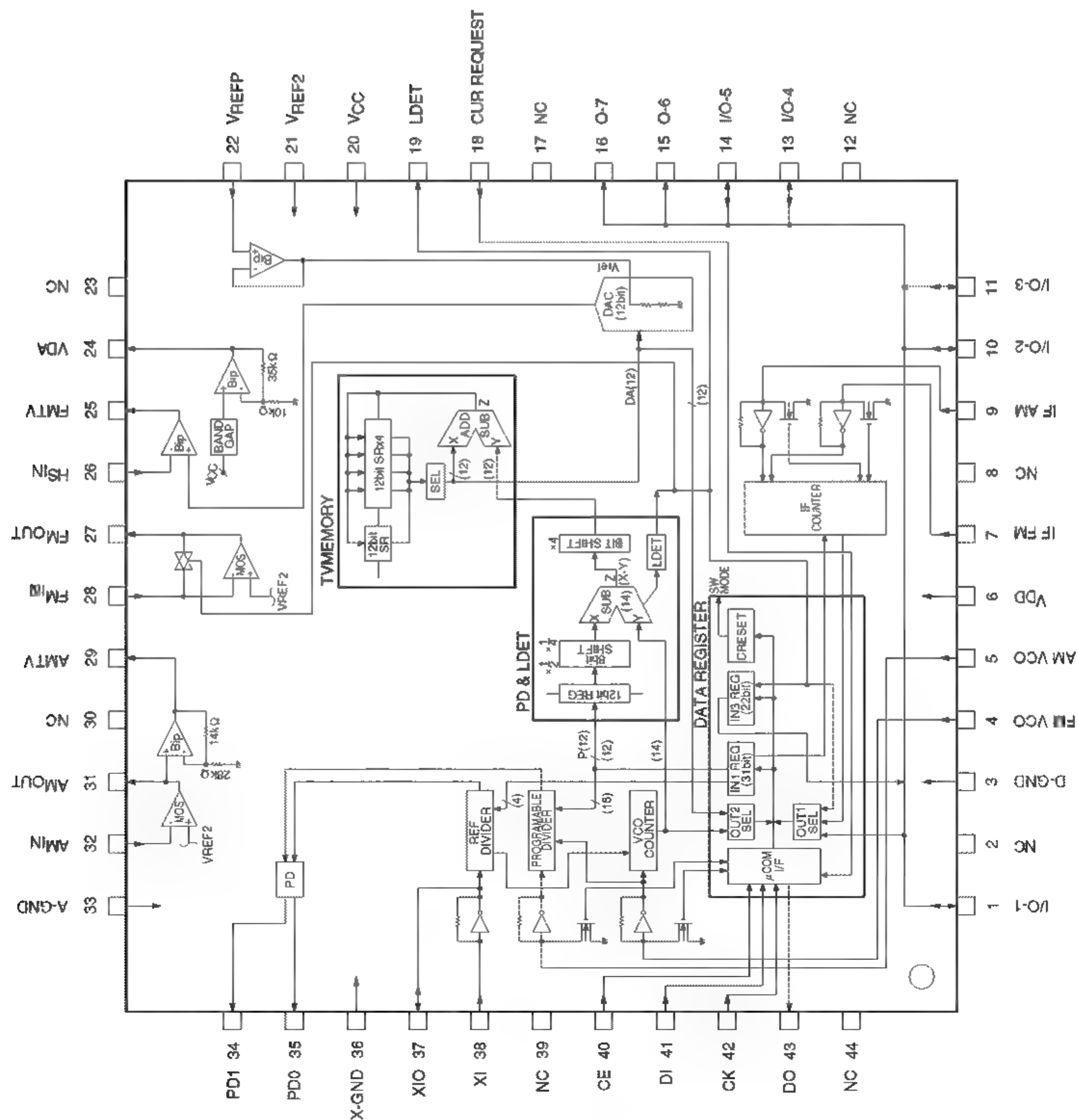




HA12197F



PM2007A



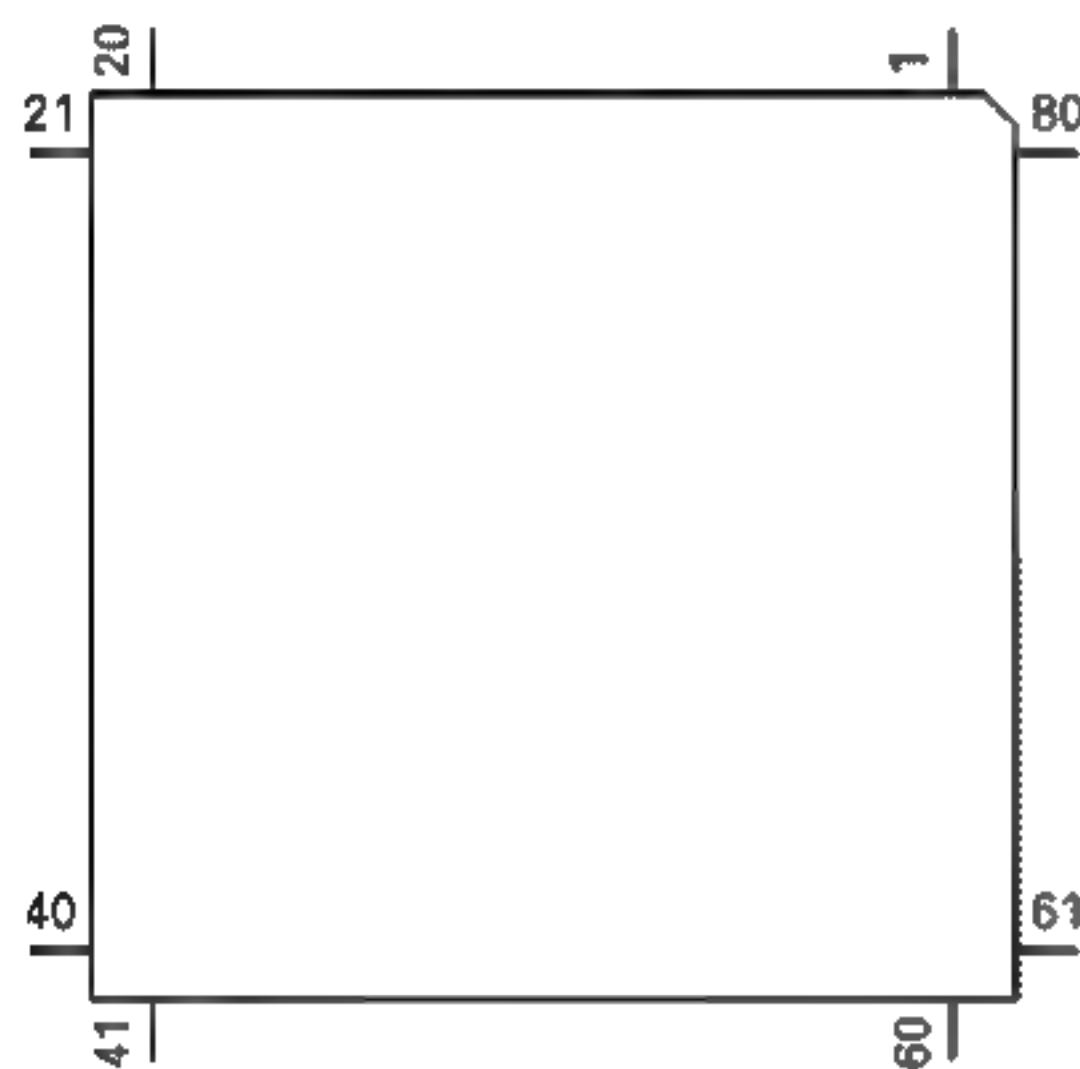
## ● Pin Functions (PD4872B, PD4879B)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	RDT	I		FROM data input
2	NC			Not used
3	ADPW			A/D converter power
4	GND			GND
5	DRST	O	C	Decoder reset output
6	MDSENS	I		Modulation detect input
7	AVREF1			(D/A converter standard voltage)
8	KYDT	I		Key data input
9	DPDT	O	C	Display data output
10	DSSENS	I		Grille detach sense input
11	TUNPDI	I		PLL IC data input
12	TUNPDO	O	C	PLL IC data output
13	TUNPCK	O	C	PLL IC clock output
14	TUNPCE	O	C	PLL IC chip enable output
15	CURRO	O	C	Tuner voltage FIX output
16	NC			Not used
17	SK	I		SK signal input
18	MUTCNT	I		NF mute control input
19-21	NC			Not used
22	SWVDD	O	C	Grille power supply control output
23	NC			Not used
24	VDT	O	C	Data output for electronic volume
25	VCK	O	C	Clock output for electronic volume
26	VST	O	C	Strobe pulse output for electronic volume
27	SYSPW	O	C	System power supply control output
28	MUTE	O	C	Mute output
29	DMINH	O	C	Mechanism mute cancel output
30,31	NC			Not used
32	EW/BEW	I		Model sense input
33	GND			GND
34-36	NC			Not used
37	TMUTE	O	N	Tuner mute output
38	FM	O	C	FM power control output
39	NC			Not used
40	ASENBO	O	C	Slave power supply control output
41-44	NC			Not used
45	PEE	O	C	Beep tone output
46	NC			Not used
47	RDS57K	I		57kHzBP-OUT sense input
48	NC			Not used
49	NC			Not used
50	EJECT	I		Eject key input pin
51	TAPLD	I		Tape loading input
52	MECPW	O	C	Cassette mechanism power output
53	MCMUT	I		Mechanism mute request
54	NOR/REV	I		Normal reverse input
55	MSIN	I		Cassette mechanism MS sense input
56	TX	O	C	IP BUS data output
57	RX	I		IP BUS data input
58	MTL	O	C	METAL output
59	NR	O	C	NR output
60	RESET	I		Reset input
61	LDET	I		PLL lock sense input
62	RCK	I		RDS demodulation clock input
63	CLKIN	I		Clock input
64	ASENS	I		ACC power sense input
65	BSSENS	I		Back up power sense input
66	SD	I		SD input



Pin No.	Pin Name	I/O	Format	Function and Operation
67	ST	I		Stereo input
68	VDD			Power supply
69	X2			Oscillator output
70	X1			Oscillator input
71	GND			GND
72	XT2			Not used
73	TESTIN	I		Test program mode input
74	AVDD			Positive power supply terminal for analog circuit
75	AVREF0			(A/D converter standard voltage input)
76	SL	I		Signal level input from tuner
77	CL	I		Synchronizing signal input of display data latch
78	NL	I		Noise level input
79-79	TL	I		Trigger level input
80	RDSLK	I		RDS LK signal input

\*PD4872B, \*PD4879B



Format	Meaning
C	C MOS
N	N channel open drain

*IC's marked by\* are MOS type.*

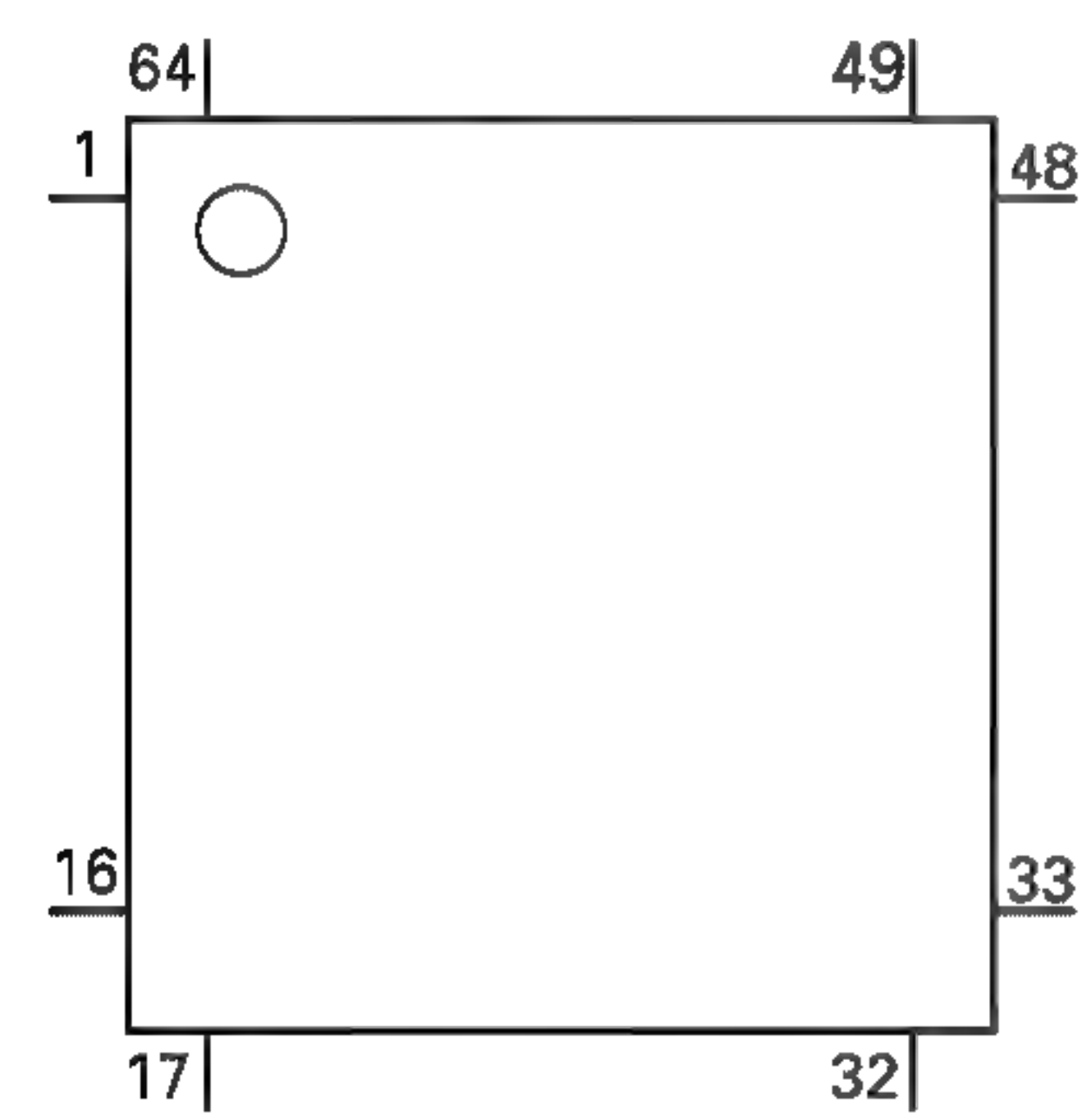
*Be careful in handling them because they are very liable to be damaged by electrostatic induction.*

KEH-P27R,2720R

● Pin Functions(PD6196A)

Pin No.	Pin Name	I/O	Function and Operation
1-5	SEG4-0	O	LCD segment output
6-9	COM3-0	O	Common driver output
10	V3		LCD bias power supply
11-14	KS4-1	O	Key strobe output
15,16	KD1,2	I	Key data input
17	REM	I	Remote control reception
18	SI	I	UART input
19	RST	I	System reset
20	SO	O	UART output
21	MODA		GND
22	X0		Crystal oscillator connection pin
23	X1		Crystal oscillator connection pin
24	VSS		GND
25,26	KD3,4	I	Key data input
27,28	KS6,5	O	Key strobe output
29-55	SEG39-13	O	LCD segment output
56	VCC		5V
57-64	SEG12-5	O	LCD segment output

\*PD6196A





## 7.1.2 DISPLAY

● CAW1391

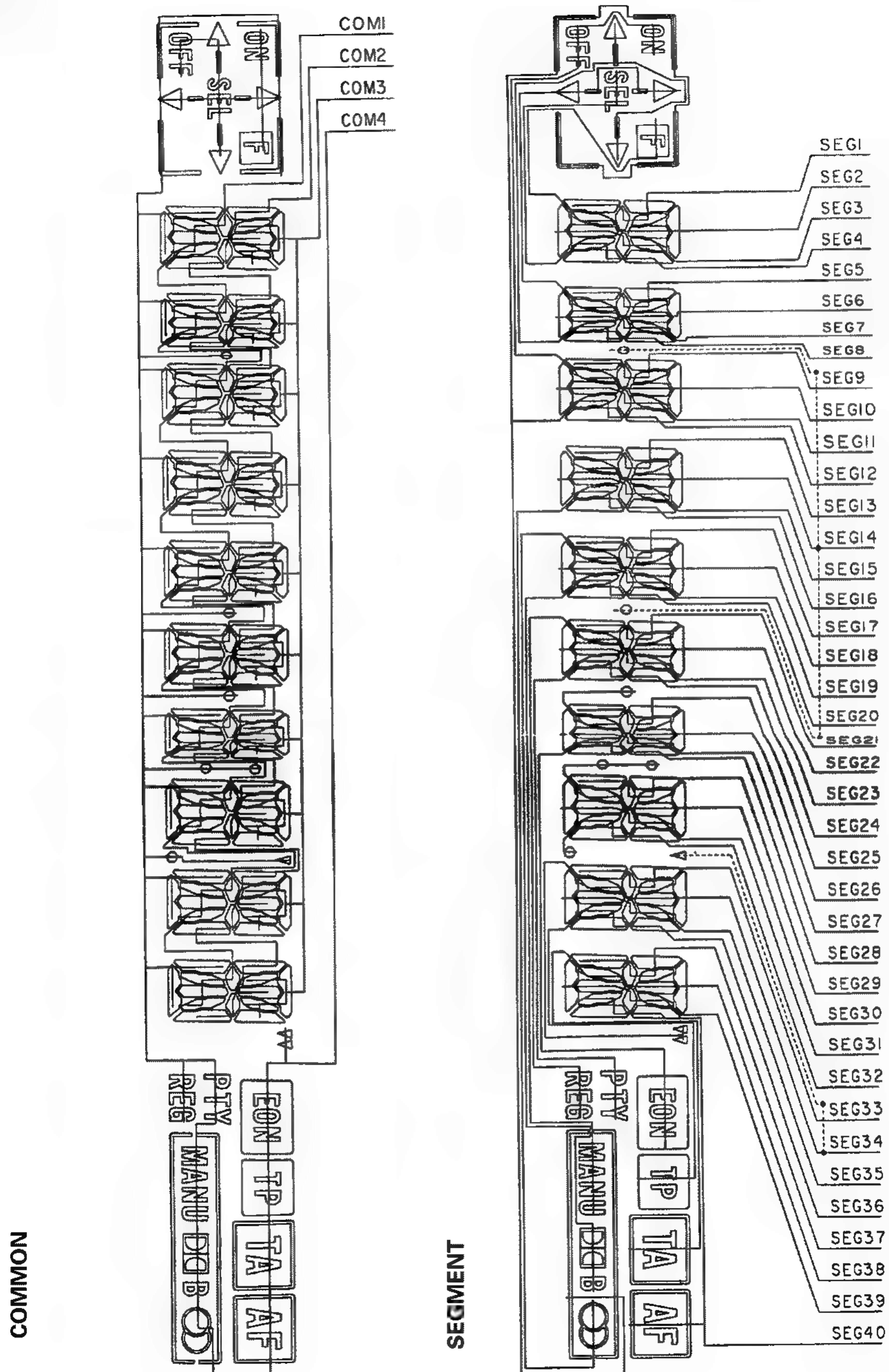


Fig. 16

## **7.2 DISASSEMBLY**

### ● **Removing the Case(not shown)**

- 1.Remove the three screws.
- 2.Remove the Case.

### ● **Removing the Cassette Mechanism Assy (not shown)**

- 1.Remove the four screws.
- 2.Disconnect the connector, and then removing the Cassette Mechanism Assy.

### ● **Removing the Grille Assy(Fig.17)**

- 1.Disengage the stopper at two locations indicated by arrows.
- 2.Remove the Grille Assy.

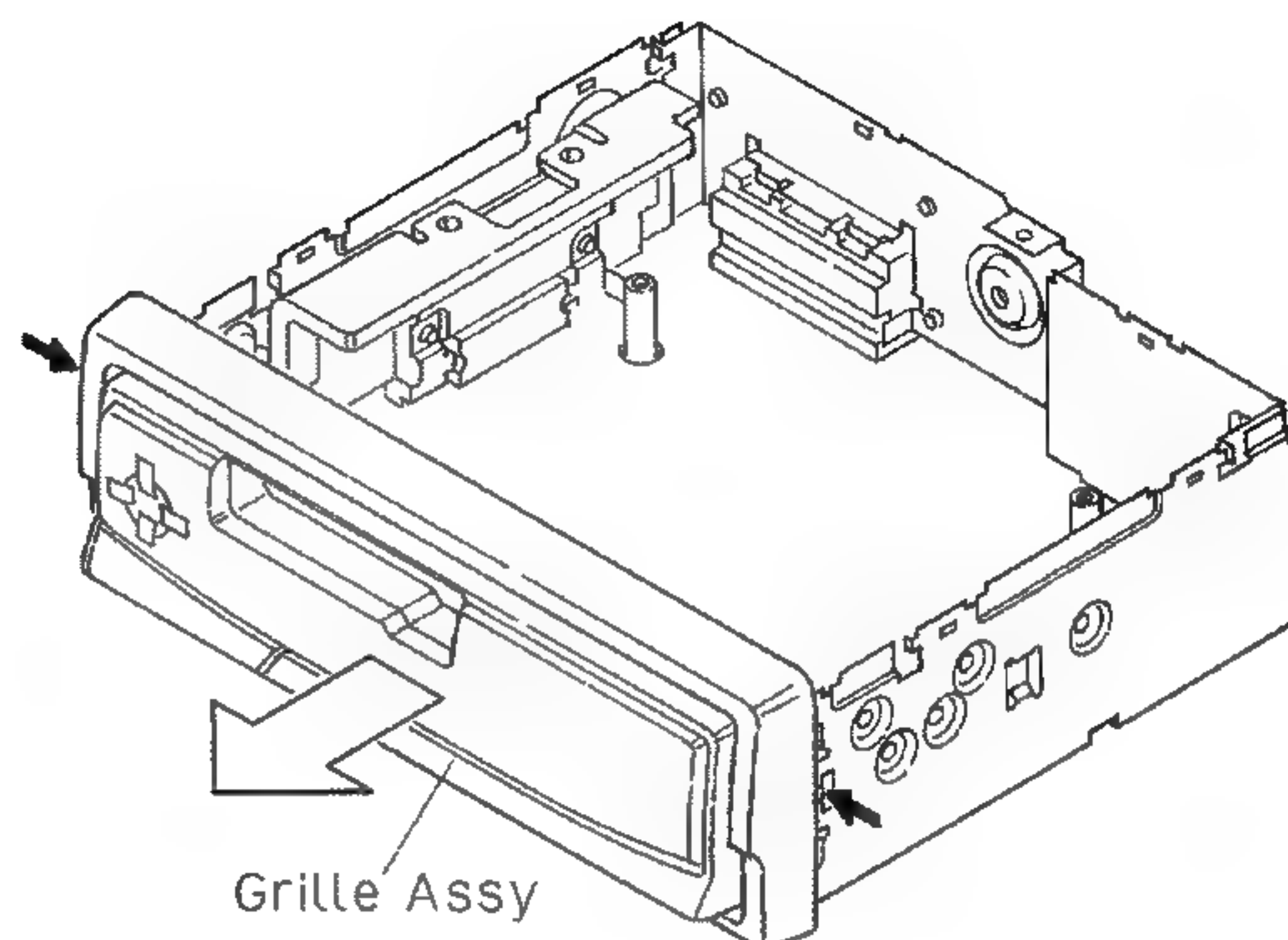


Fig. 17

### ● **Removing the Tuner Amp Unit(Fig.18)**

- 1.Removing the three screws A, and two screws B.
- 2.Removing the screw C.
- 3.Unbend the tabs at ■ location indicated by arrow until straight.
- 4.Remove the Tuner Amp Unit.

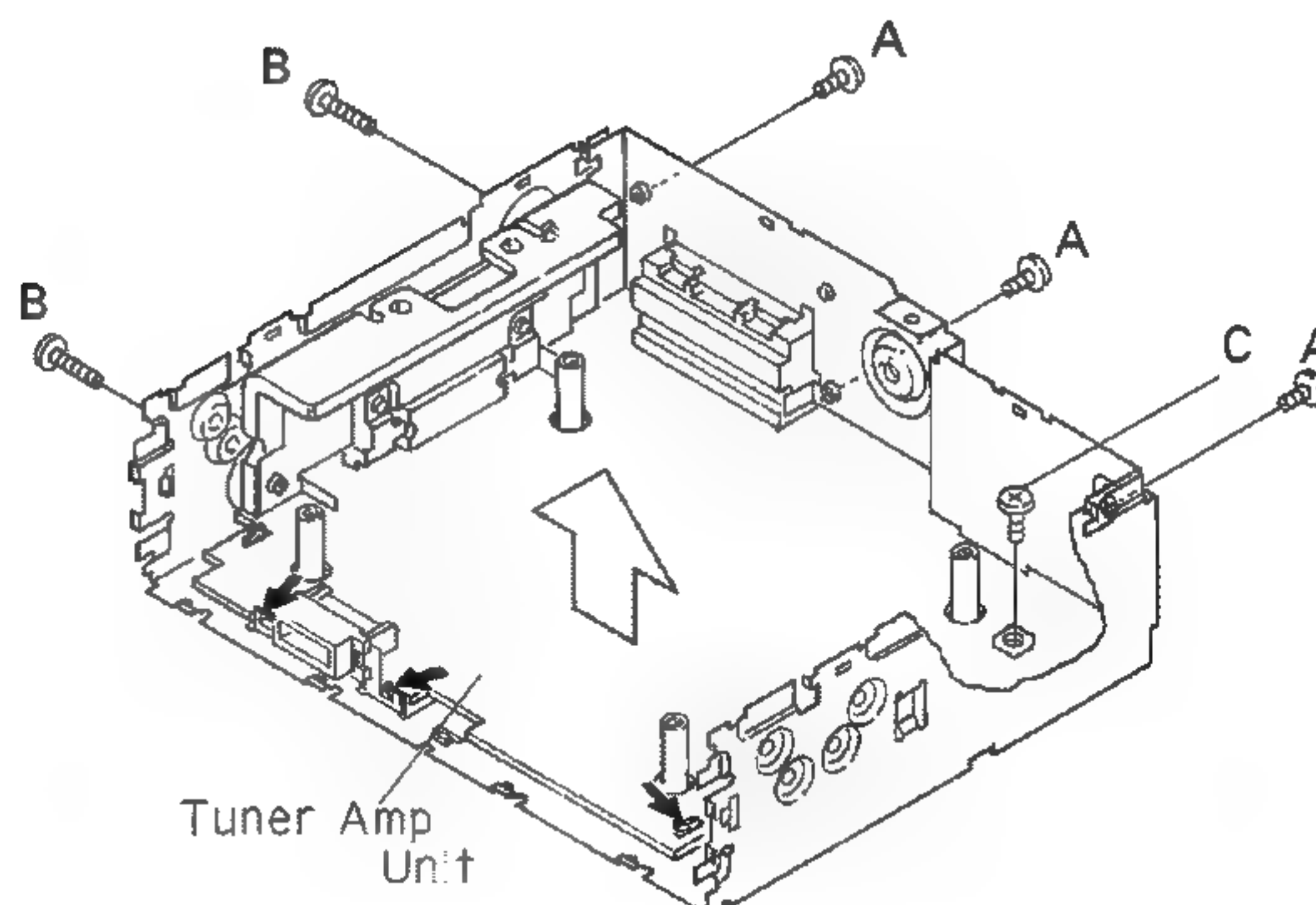


Fig.18



## 7.3 BLOCK DIAGRAM

## ● KEH-P27R/X1M/GR

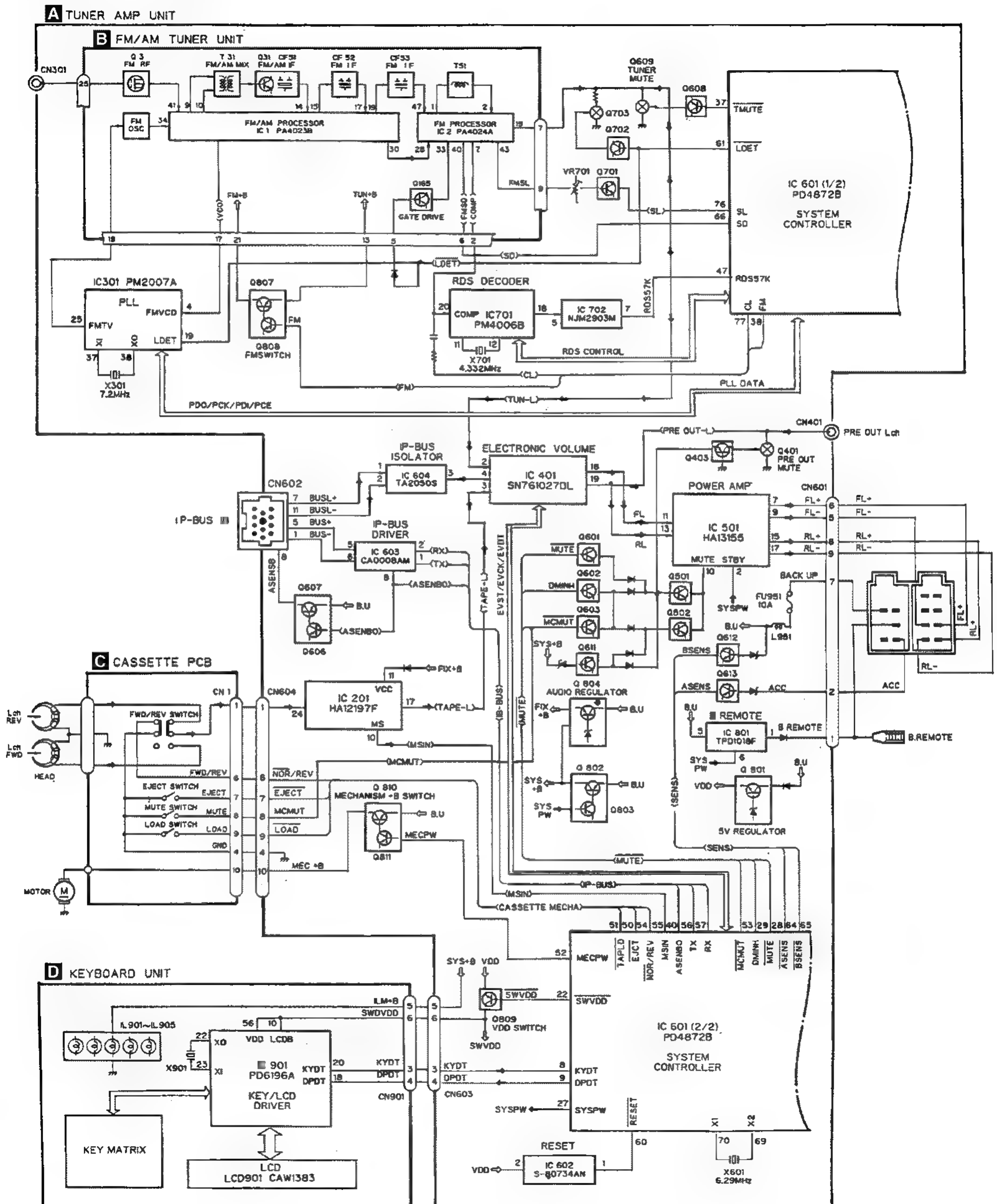


Fig. 19

8. OPERATIONS AND SPECIFICATIONS

● KEH-P27R/X1M/GR

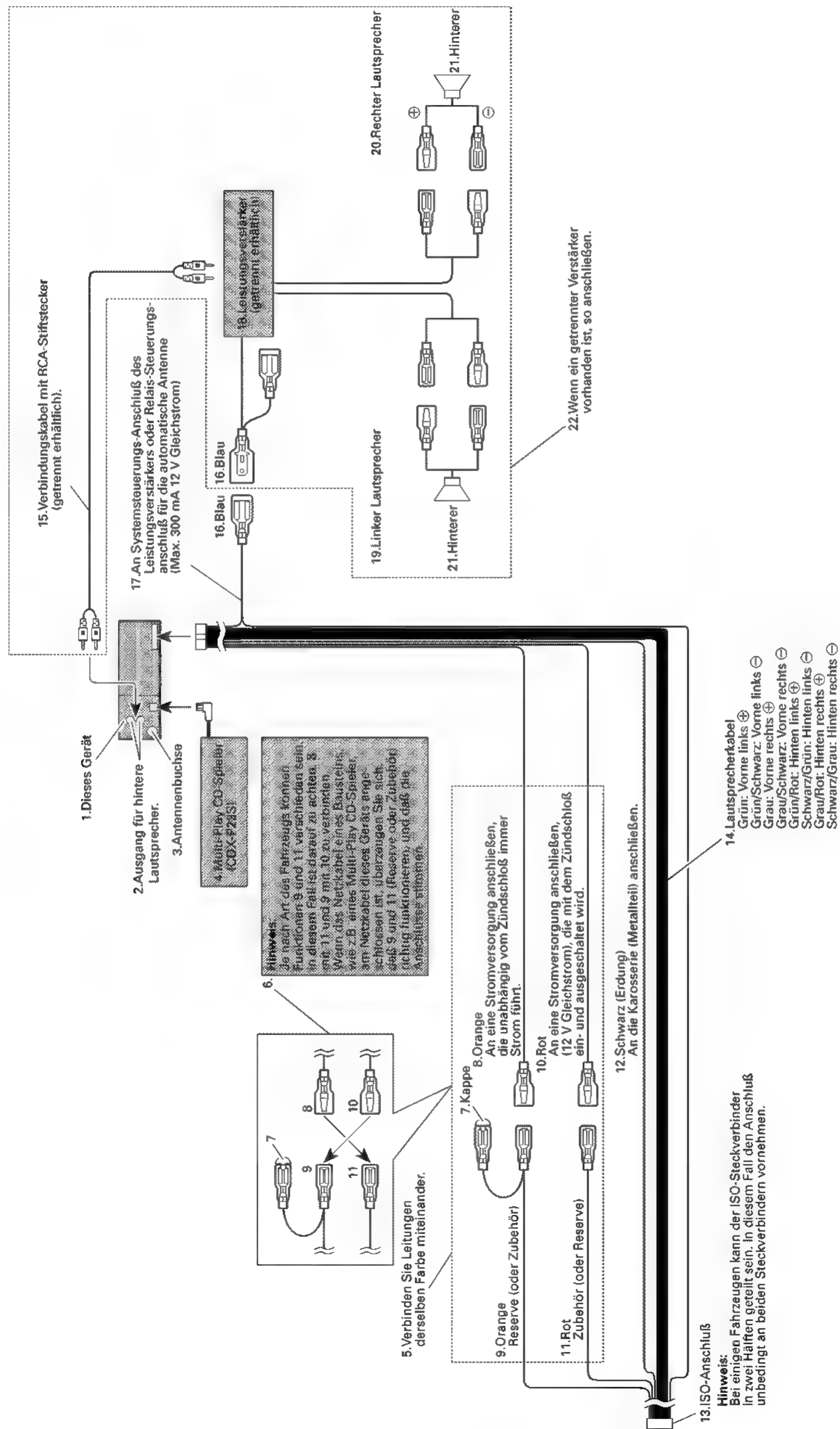
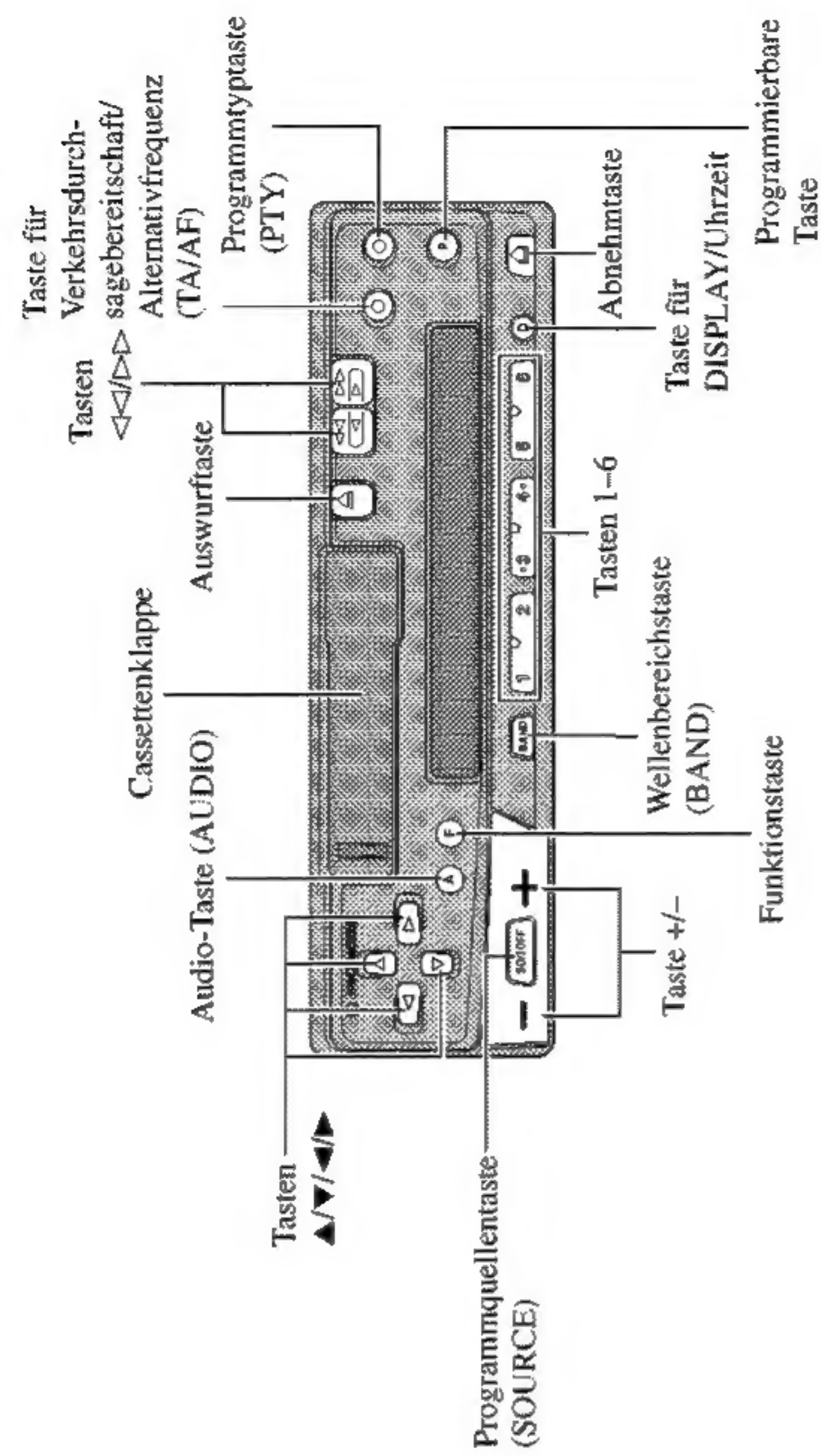


Fig. 20



## 8.1 OPERATIONS

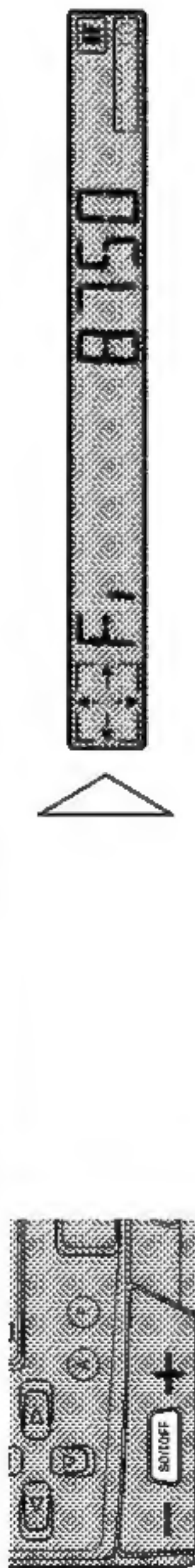
### Tastenübersicht



### Grundlegender Betrieb

#### Einschalten

- Wählen Sie die gewünschte Programmquelle (wie z.B. Tuner).



Mit jedem Druck auf die Taste SOURCE wird die Programmquelle in der nachstehenden Reihenfolge gewählt:

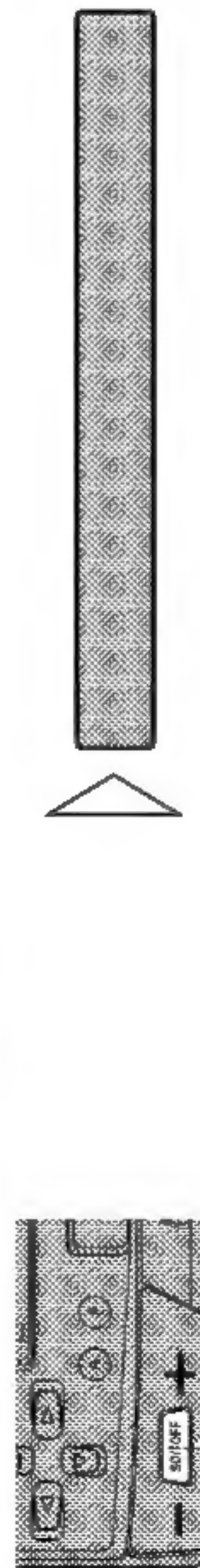
Tuner  $\rightarrow$  Tape  $\rightarrow$  Multi-CD player  $\rightarrow$  AUX

#### Hinweis:

- In den folgenden Fällen ändert sich die Programmquelle nicht:
  - \* Kein Multi-CD-Player ist an diesem Gerät angeschlossen.
  - \* Es befindet sich keine Cassette im Gerät.
  - \* Es befindet sich kein Magazin im Multi-CD-Player.
  - \* AUX (externer Eingang) ist ausgeschaltet (OFF).

#### Ausschalten

- Die Programmquellen ausschalten.



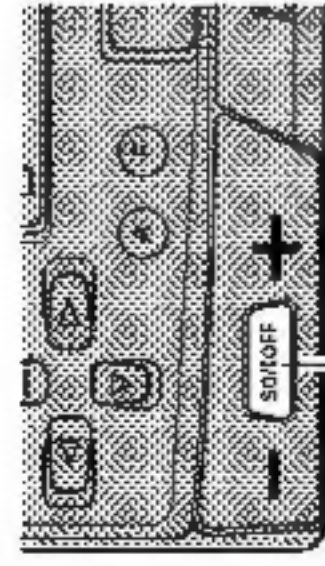
1 Sekunde lang gedrückt halten



Tuner-Betrieb

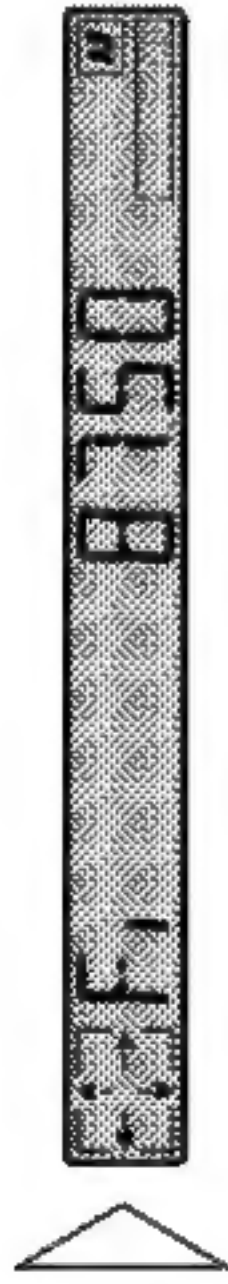
Grundlegender Tuner-Betrieb

1. Tuner wählen.

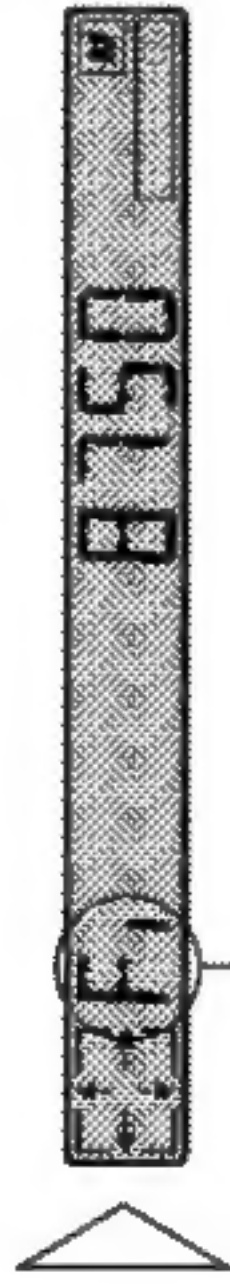
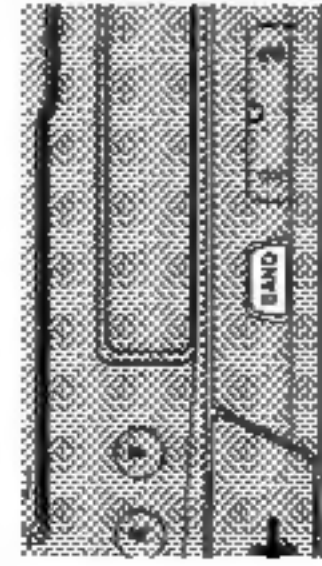


Die Programmquelle ändert sich mit jedem Druck ...

Der Programm-Service-Name oder die Frequenz erscheint im Display. (Bei Empfang eines Stereo-Senders leuchtet die Anzeige "STEREO".)

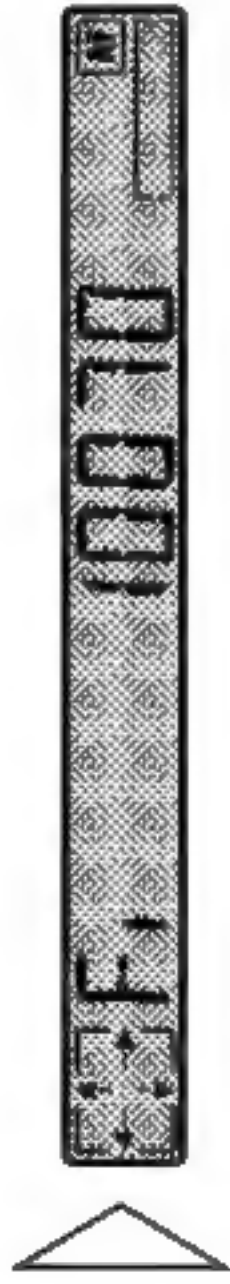
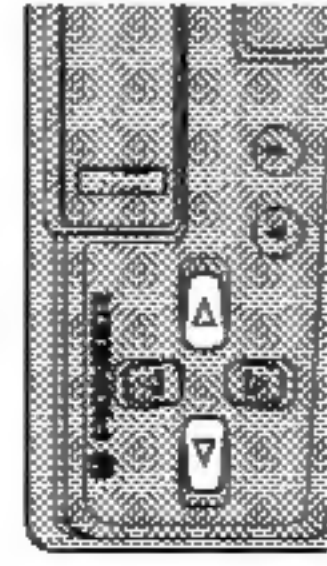


2. Wählen Sie den gewünschten Wellenbereich.



F1 → F11 → F111

3. Stimmen Sie den Receiver auf eine höhere oder tiefere Frequenz ab.



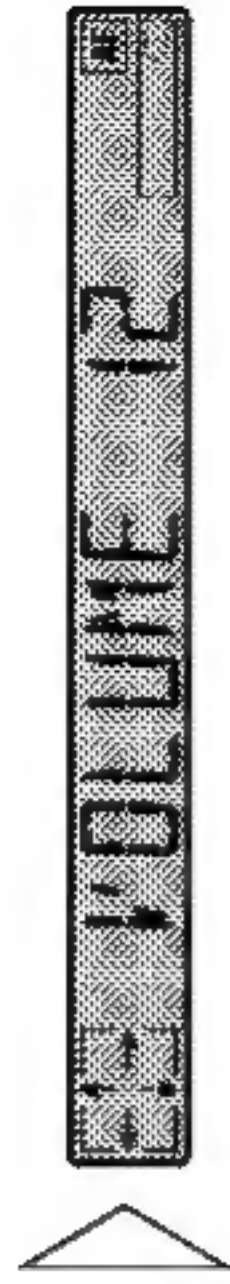
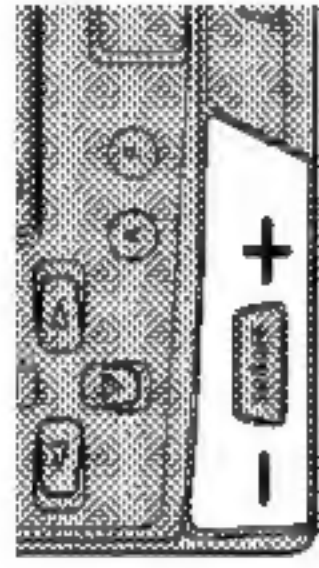
Der Tuner dieses Geräts gestattet Ihnen die Wahl der Abstimmung durch Ändern der Zeit, während der Sie die Taste drücken.

Manuelle Abstimmung (Schritt für Schritt)	0,3 Sekunden oder weniger
Suchlauf-Abstimmung	0,3 – 2 Sekunden
Manuelle Abstimmung (fortlaufend)	2 Sekunden oder mehr

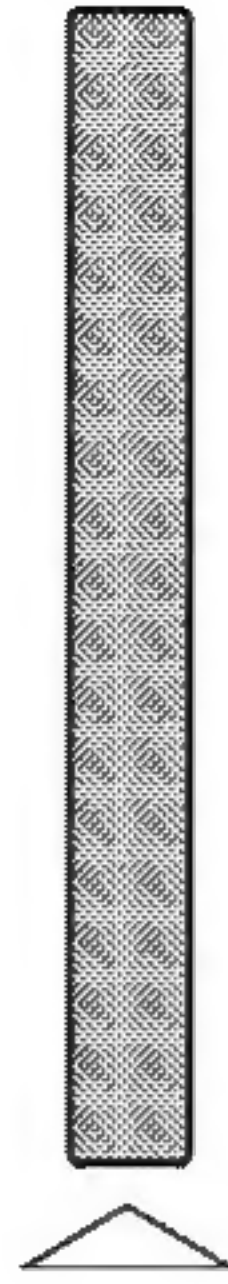
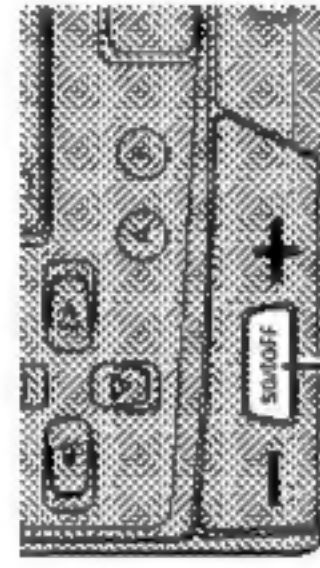
Hinweis:

- Zur Wahl eines schwachen Rundfunksenders, der mit der Suchlauf-Abstimmungsfunktion nicht einstellbar ist, benutzen Sie das manuelle Abstimmungsverfahren.

4. Erhöhen oder senken Sie die Lautstärke.



5. Schalten Sie die Programmquelle aus.

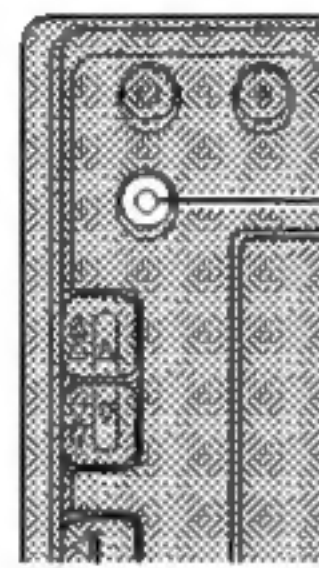


1 Sekunde lang gedrückt halten

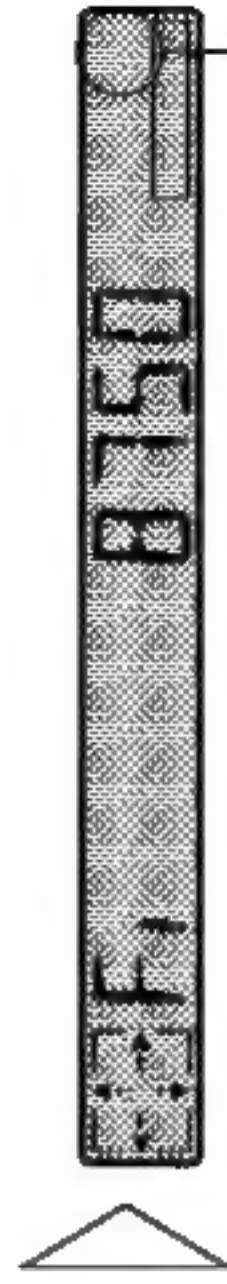
AF-Funktionsumschaltung

Die AF-Funktion dieses Produkts kann ein- und ausgeschaltet werden. AF sollte für normalen Abtastbetrieb ausgeschaltet werden.

- Schalter AF ausgeschaltet (OFF).



2 Sekunden lang gedrückt halten



"AF" verschwindet

Zum Einschalten von AF wiederholen Sie das obige Verfahren.

Hinweis:

- Die AF-Funktion kann auch im Funktionsmenü ein- und ausgeschaltet werden.

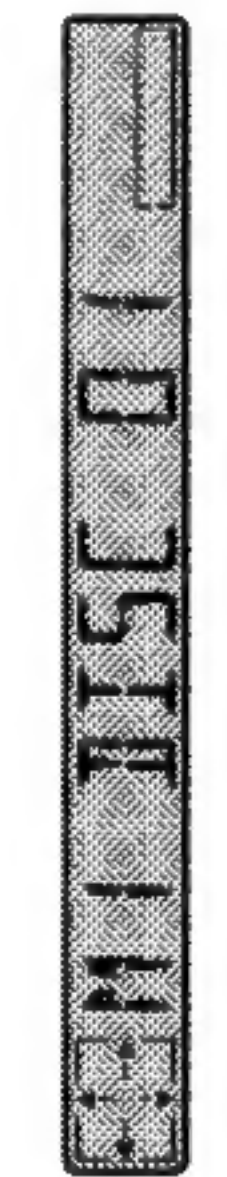
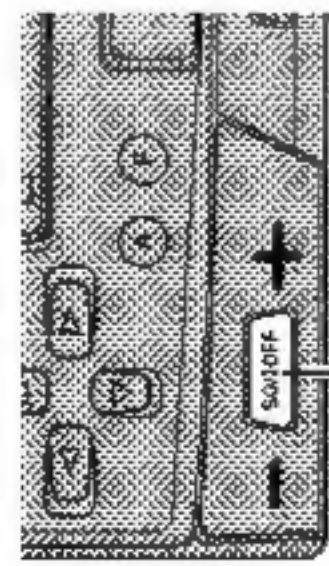


## Gebrauch eines Multi-CD-Players

Mit diesem Gerät kann ein CDX-P23S gesteuert werden.

### Grundlegender Betrieb eines Multi-CD-Players

1. Wählen Sie die Multi-CD-Player-Programmquelle.

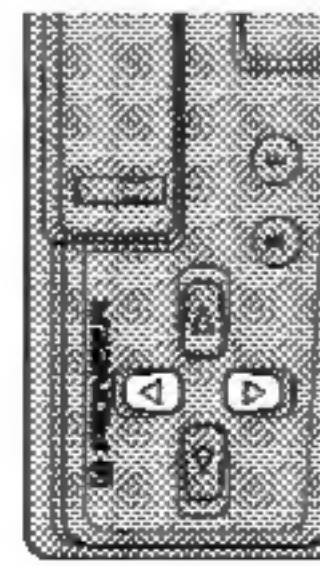


Die Programmquelle ändert sich mit jedem Druck ...

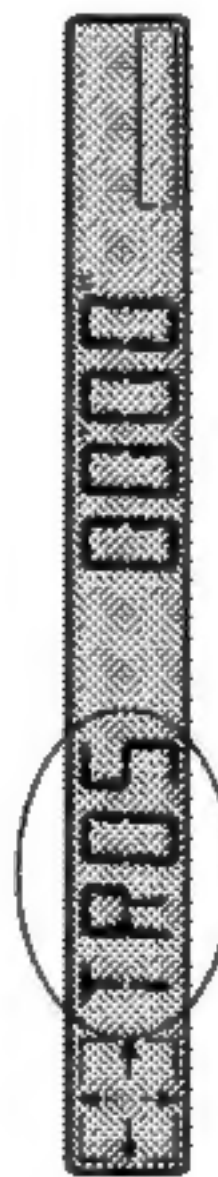
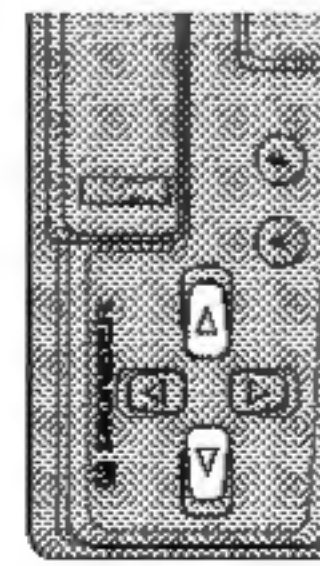
#### Hinweis:

- Der Multi-CD-Player kann einen vorbereitenden Betriebsschritt durchführen, wie z.B. Überprüfung des Vorhandenseins einer Disc oder Lesen der Disc-Information, wenn der Strom eingeschaltet oder eine neue Disc für Wiedergabe gewählt wird. "READY" wird angezeigt.
- Wenn der Multi-CD-Player nicht richtig funktionieren kann, wird eine Fehlermeldung, wie z.B. "ERROR 14", angezeigt. Siehe Bedienungsanleitung für den Multi-CD-Player.

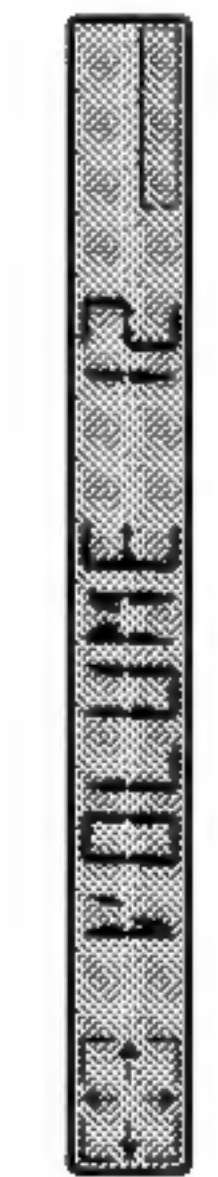
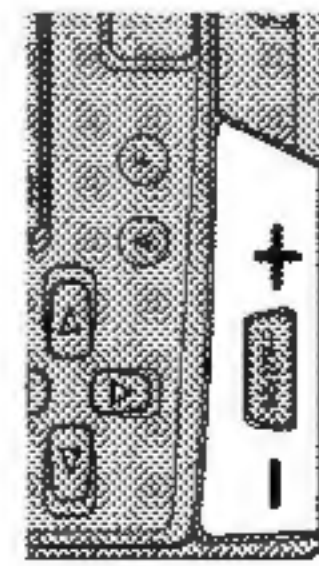
2. Wählen Sie die gewünschte Disc.



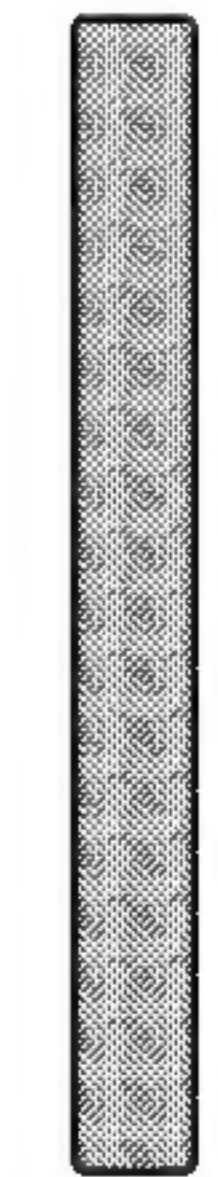
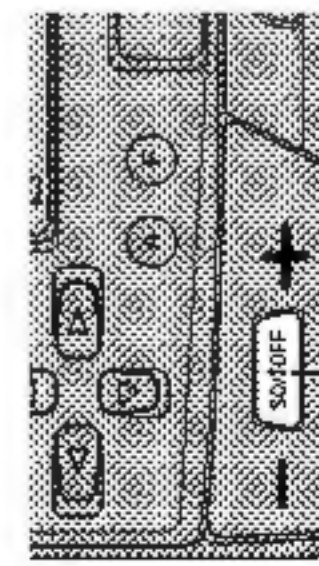
3. Schalten Sie Titel für Titel vorwärts oder rückwärts.



4. Stellen Sie die Lautstärke wunschgemäß ein.



5. Schalten Sie die Programmquelle aus.

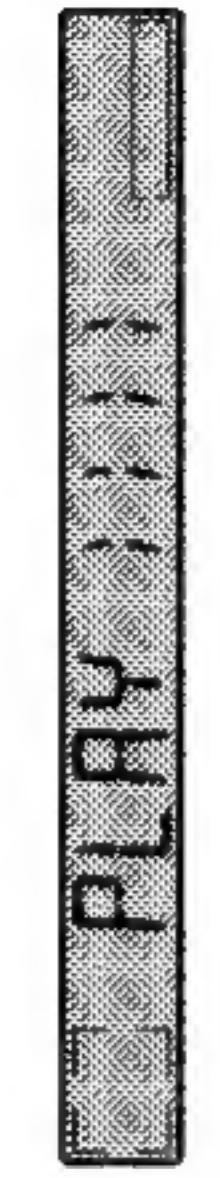
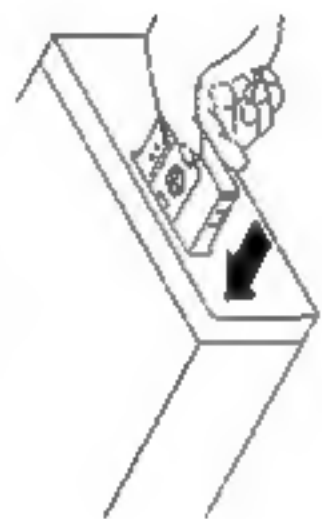


1 Sekunde lang gedrückt halten

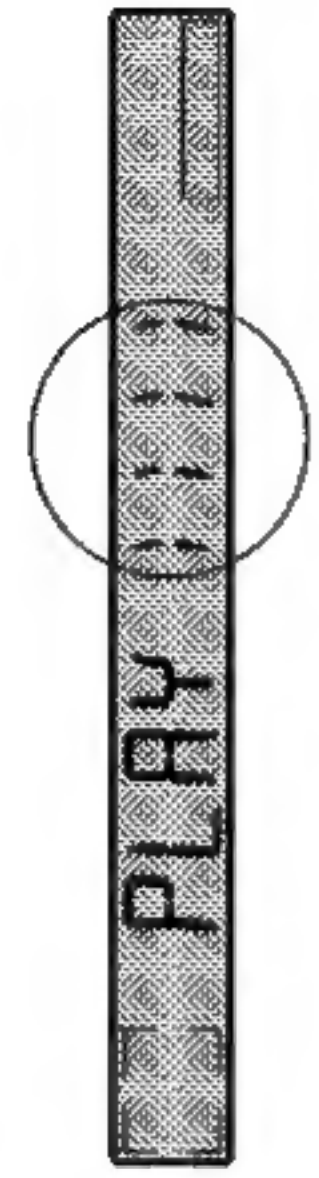
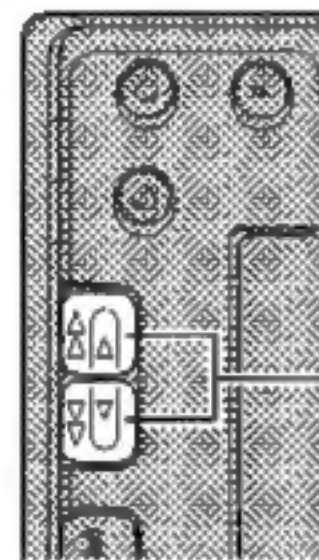
## Gebrauch des Cassettenspielers

### Grundlegender Betrieb des Cassettenspielers

1. Schieben Sie eine Cassette ein.

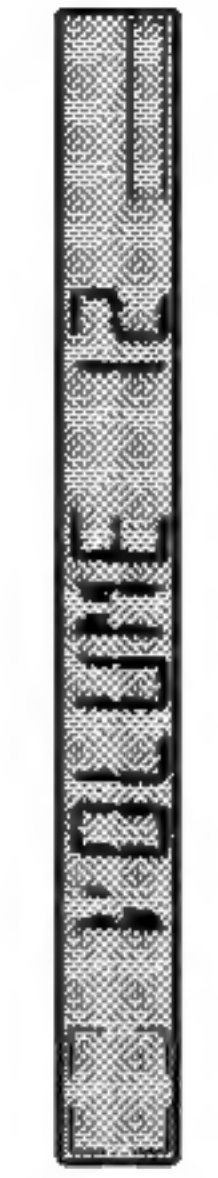
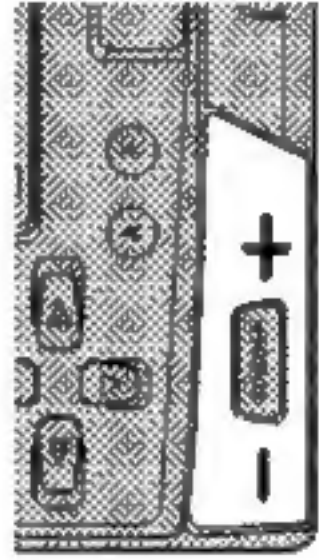


2. Wählen Sie Wiedergabe von Seite A oder B.

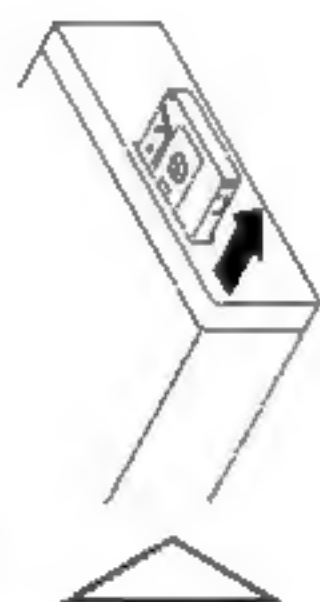
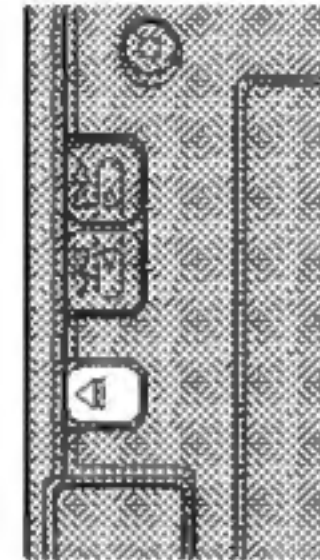


Gleiche Zeit

3. Stellen Sie die Lautstärke wunschgemäß ein.



4. Entfernen Sie die Cassette.



#### Hinweis:

- Der Cassettenbetrieb kann bei eingeschobener Cassette ein- und ausgeschaltet werden.



8.2 SPECIFICATIONS

Technische DatenAndere Funktionen

Allgemeines

Stromversorgung	14,4 V Gleichspannung (Toleranz 10,8 – 15,1 V)
Erdungssystem	Negativ
Max. Leistungsaufnahme	8,5 A
Abmessungen	
(Einbaugröße)	178 (B) × 50 (H) × 150 (T) mm
(Frontfläche)	188 (B) × 58 (H) × 19 (T) mm
Gewicht	1,2 kg

Verstärker

Max. Ausgangsleistung	35 W × 4
Dauer-Ausgangsleistung	22 W × 4 (DIN 45324, +B = 14,4 V)
Lastimpedanz	4 Ω (4 – 8 Ω zulässig)
Klangfarbenregler	
(Tiefen)	±12 dB (100 Hz)
(Höhen)	±12 dB (10 kHz)
Loudness-Kontur	+10 dB (100 Hz), +7 dB (10 kHz) (Lautstärke: –30 dB)
(KEH-P27R/X1M/GR)	
Preout-Ausgangspegel/	
Ausgangsimpedanz	500 mV/1 kΩ

Cassettenspieler

Band	Kompakt-Cassettenband (C-30 – C-90)
Bandlaufgeschwindigkeit	4,76 cm/s(+0.14 cm/s, -0.05 cm/s)
Umspulzeit	ca. 90 s für C-60
Gleichlaufschwankungen	0,13% (Effektiv)
Frequenzgang	40 – 14.000 Hz (±3 dB)
Stereotrennung	45 dB
Rauschabstand	52 dB (IEC-A-Netz)

UKW-Tuner

Frequenzbereich	87,5 – 108 MHz
Nutzempfindlichkeit	11 dBf (1,0 µV/75 Ω, Mono, S/N: 30 dB)
50-dB-Geräuschberuhigung	16 dBf (1,7 µV/75 Ω, Mono)
Rauschabstand	70 dB (IEC-A-Netz)
Verzerrungen	0,3% (bei 65 dBf, 1 kHz, Stereo)
Frequenzgang	30 – 15.000 Hz (±3 dB)
Stereotrennung	40 dB (bei 65 dBf, 1 kHz)

Hinweis:

- Änderungen der technischen Daten und des Designs jederzeit vorbehalten.